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First sight of MGT's new computer - page 5

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SINCLAIR PC 200 FIASCO



So what is UNIX?

All you ever
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(but were too
afraid to ask)

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On sale without manuals, operating system, monitors and games • Full story page 2 • Analysis page 11



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A friendly
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publishing
- page 17

R-TYPE



Power-packed ST version blasts in - page 31

Pixel Picasso!

The country's most talented computer
artist reveals his secrets - page 46



NABBED!

Micronet tracks down comms cheat

Bulletin board Micronet is tightening up its security after a fraudster appeared on subscribers' screens last week offering free air time.

The cheat was luring Netters into dialling his number so that he could find out their secret passwords. His plan was then to use those passwords and gain Micronet time for free.

Micronet is stressing that members were quick to report the fraudster and claims that no-one has been cheated. However, the bulletin board screens have been flashing security warnings all week.

"We're very security conscious and we're looking into this matter closely," commented Micronet's Miles Salinas. He said the identity of the bogus user was known and he has been suspended from the network. Micronet's top boss are currently pondering what further action to take.

Although this play is simple it has never been used before. Salinas explained that users "are very careful with their IDs and passwords".

That didn't take long!



• Roger Rabbit: Timely US import

Big name licence games will be pleased to hear that a computer version of *Who Framed Roger Rabbit?* has already arrived in the UK.

The movie itself goes on general release here this month after taking the US by storm. And the game, sourced from US software house Bizarre Visions, has been imported by Gamestar which specialises in grabbing brand new games from across the Atlantic.

Who Framed Roger Rabbit? is available for the Amiga at £24.95. More info on 0202 877431.

Angry buyers find some machines lack manuals and software

AMSTRAD BLAMED FOR PC200 CHAOS

High-street chain Comet has accused Amstrad of a 'cock-up' after supplies of the new Sinclair PC200 turned up in Comet stores without manuals and essential software.

An Express investigation has revealed a wide range of problems in various shops leading to anger and frustration among prospective buyers of the new machine.

Although Comet has conducted nationwide advertising of the PC200, many shops last week were unable to supply the full package:

- Many had machines without manuals and without the MS-DOS operating system.

- Others were missing the joystick and free US Gold games bundled with the machine.

- In some shops monitors were unavailable.

- Others had monitors but no computers.

- Buyers also complained that even the leads to connect to a TV set were missing.

The problems have led to some branches taking the PC200 off display, while in other cases, buyers have been allowed to part with cash and have only discovered when they opened the box at home that the machine was virtually unusable.

One such buyer told Express: "I have paid in advance and have nothing to show but a useless, inert PC200".

A Comet spokesperson told Express that a batch of the machines delivered by Amstrad had some missing "it's a cock-up at their end."

She said the missing stock had been considered and was on its way to the shops.

"The machines are selling brilliantly. We can only apologise to customers, but the problem is being sorted out."



• Comet. Some shops with, some without

Amstrad - which owns the Sinclair brand - says that only the first batch of "a tiny number" of machines was affected. Asked why so many shops nationwide seemed to have had

problems, a spokesman said: "Comet have been sent all the pieces. I can't comment on their distribution." *Continued page 11*

ST console: the only way is up (and sideways)

Atari's *E99* console based on the ST will include hardware-controlled scrolling, both vertical and horizontal. Atari boss Bob Gleadon has told Express.

This facility is part of an extended graphics capability. However the machine will not use sprites.

The console is due for release in the UK next autumn where it will come head to head against stiff competition from, among others, the Sega Megaforce.

At the moment three ST consoles are in the hands of software developers in the US. UK publishers should be receiving models later this month.

QL World drops off the shelves

The only remaining QL monthly *QL World* is to be taken off the news shelves next March and will be available only through subscription.

The mag's publisher Focus says that since *QL World* is being bought by the same people each month it might as well

go out through the post. Focus claims the title is selling to a "hard core" of 17,000 users.

"We're talking about a mag dealing with a machine which hasn't been in circulation for years and this is a natural progression," commented publisher Perry Treves.



• *QL World*: Now sold only

Why you'll pay extra for your printer

Faint hopes that the EEC might bring about a reduction in dot matrix printer prices were dashed last week as import levies on 15 Japanese manufactures were upheld for the next five years.

Effectively, this means that the Japanese printers cost up to 47 per cent more than they otherwise would. The decision was made after European manufacturers claimed the Japanese were dumping printers onto the European market and selling them at ultra low prices (see box out).

With this move the EEC hopes to protect European companies such as Philips and Olivetti and to nudge Japanese companies into making printers here instead of simply exporting.

The Japanese claim that European printer manufacturers are simply

exploiting EEC rules to avoid being undercut.

Epstein has been the most vociferous opponent of the law, naming advertisements in the national press decrying the move. A spokesman told Express: "The only people who lose, as always,

The dumping claim

The European claim is that the prices charged by the Japanese manufacturers over here are artificially low. For example a company already producing 30,000 printers a month for the Japanese market could ramp up production by another 1,000 very cheaply and then "dump" these extra machines into Europe at low prices in order to increase its share of the market.

The Japanese, however, say their lower prices are due simply to more efficient manufacturing.

are the end users. As someone pointed out last week the European manufacturers are still driving around in their Mercedes."

Epson's levy is fixed at 35 per cent for the next five years. The firm's penalty is less than other Japanese firms because it has manufacturing plants in Remford and Furlis.

"It's a matter of great concern to us. I wish we could sell these printers with 27 per cent off the price. But because the European manufacturers need to maintain high prices in order to meet their costs we are forced to have artificially high prices."

He added: "If the Europeans' costs go up they'll just go scuttling off to the EEC with cap in hand asking for the levy to be increased."

CRASH! Larry zaps City gamers

A new craze amongst big City firms for computer games had huge banks and trading houses in a panic last week as a software virus crashed many vital systems.

City workers have been whizzing away the hours by playing Mediagenix's solitaire game. Leisure Staff Larry is the Land of the Lounge Lizards. However, a specks they were playing printed versions which contained a virus - a piece of software designed to remain invisible for a period so that it is copied undetected from user to user. When the virus becomes active it wiped key financial information off the dealers' hard disk drives and led to whole networks being shut down.

Since the Black Monday Crash dealers have found themselves with fewer opportunities to make pots of cash and more time on their hands. Thus the new trend for computer games. But the effect of this leisurely pastime has been severe chaos in several city firms.

Some merchant bankers are refusing to turn their computers on for fear of their machines become



• **Larry's gift:** City pays for computer tillation
infected.

Mediagenic has managed to distance itself from the nightmare, pointing out that such are the risks of using non-original versions of a game.

'Basically a bootleg has caused this. There's no problem with the original,' commented the firm's Amanda Barry.

"Obviously we're concerned for them, but if you must use printed games you should be aware of the consequences."

Let's see: Sail Larry appeals to the City high fliers because it involves a seddy womanizer and gambler. The

Computers face real world test

Four huge American computer companies have put their heads together to try to come up with the definitive standard for testing machines.

The aim is to iron out all the anomalies which have baffled computer users for years.

Whilst in the past benchmarks have been measured by hugely different technical standards now they will be tested according to real applications such as programming, database management, computer aided design and electronic publishing. The four companies involved are Hewlett-Packard, Apollo, MIPS and Sun.

Not a lot of people know that.

Father Patrick Ryan, the Catholic priest Mrs Thatcher's so keen to get her hands on, is reported to be heavily into computers.

Ryan is said to have been responsible for computerising the IRA's multifarious financial activities.

The IRA's records system is reported to have been very primitive before it was transferred to micros.

modern adult adventure charts his 'humorous' exploits in casinos and nightclubs.

Amiga and ST: the numbers game

Figures released by Commodore suggest that there will be twice as many Atari STs installed as Amigas by the year's end.

Atari reckons that by midnight on New Year's eve there will be around 200,000 of the machines in use in the UK. With the

end of life year - 15,000 in 1987 and 25,000 in 1998. Communicable diseases.

"That sounds way offensively low," said a spokesman. "Amiga games are selling nearly as well as ST games for a start, so there can't be that much difference."



+ Joseph W. Hall as money in the dirt

GAMES TOP TWENTY		FULL PRICE
1	Double Dragon Spectrum, C64	\$10.95/\$9.95
2	Last Ninja 2 Spectrum, C64, CPC	\$9.95/\$9.5
3	Return Of The Jedi Spectrum, C64, ST, CPC	\$9.95/\$9.5
4	Football Manager 2 Spectrum, C64, ST, Amiga, PC, CPC	\$9.95/\$9.5
5	Pacmania ST, Amiga, Sase, C64, CPC	\$9.95/\$9.5
6	Out Run Spectrum, C64, ST, CPC, Amiga	\$9.95/\$9.5/\$9.5
7	Deley Thompson's Olymp. Chall. Spectrum, C64, ST, Amiga, CPC	\$9.95/\$9.5
8	Tetris Coo-oon Spectrum, C64, CPC	\$9.95/\$9.5
9	Game Set and Match 2 Spectrum, C64, CPC	\$9.95/\$9.5
10	Supreme Challenge Spectrum, C64, CPC	\$9.95/\$9.5
11	R-Type Spectrum	\$10.95/\$9.95
12	AfterBurner ST	\$10.95/\$9.95
13	Elite Spectrum, C64, ST, BBC, Electron, PC, MSX, CPC	\$10.95/\$9.95
14	Emily Hughes' Int. Soccer C64	\$10.95/\$9.95
15	Track Suit Manager Spectrum, C64, CPC	\$10.95/\$9.95
16	Airframe Ranger Spectrum, C64	\$10.95/\$9.95
17	Lambard PAC Rally ST, Amiga	\$10.95/\$9.95
18	Starlight 2 ST, Amiga	\$10.95/\$9.95
19	Gold Silver And Bronze Spectrum, C64, CPC	\$10.95/\$9.95
20	Armalyte C64	\$10.95/\$9.95
GAMES TOP TEN		BUDGET
1	Joe Blade 2 Spectrum, C64, BBC, C64, Electron, CPC	\$4.95/\$4.5
2	Bomb Jack Spectrum, C64, C64, ST, Amiga	\$4.95/\$4.5
3	Commando Spectrum, C64, BBC, C64, Electron, CPC	\$4.95/\$4.5
4	Footballer Of The Year Spectrum, C64, BBC, Atari-64, C64, MSX, CPC	\$4.95/\$4.5
5	Advanced Pinball Simulator Spectrum, CPC	\$4.95/\$4.5/\$4.5
6	Combat Lynx Spectrum, C64, CPC, BBC, Electron	\$4.95/\$4.5
7	International Poppy Simulator Spectrum, CPC	\$4.95/\$4.5/\$4.5
8	Slant Bike Simulator Spectrum, C64, CPC	\$4.95/\$4.5
9	Kik Start 2 Spectrum, C64, CPC	\$4.95/\$4.5/\$4.5
10	End Zone Spectrum, C64, CPC	\$4.95/\$4.5/\$4.5

COMPILED BY GUY GILLMAN

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Micro store boom

The days of computer shops closing down hither and thither appear to be behind us with new outlets springing up every week.

Building chain store Computer Express (no connection with this magazine, except as an advertiser) this week opens a new shop in Birmingham and is still standing behind its bullish claim to be Britain's most promising computer outlet.

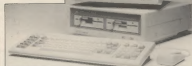
Earlier this year the company predicted that it would beat Dixons Business Stores as the number one outlet for serious computer users claiming better technical know-how. Whilst the new shop in Birmingham is only its fourth venture Computer Express expects to open another ten before the end of next year.

AMSTRAD SLASHES PC PRICES

Amstrad has slashed between £50 and £250 off its range of PC1512s and 1640s in a bid to clarify its already confused MS-DOS line up.

The new prices come into effect from January 1st on all but the entry level machines. Amstrad reasons that the current pricing levels of the higher end machines overlap onto territory now taken by the recently launched 386.

Continuing chip shortages and the meagre availability of the new 286s are responsible for Amstrad waiting this long to make the cuts. Come the new year, supplies of the 1640s and



• PC1512: Back with price cuts

1512s will be substantial for the first time in months.

Slightings of the 1512 have been rare these last few months. Some industry pundits were even suggesting that Amstrad was thinking of cutting the machine off - a move which would have flown in the face of traditional Segurite thinking.

"At the time of the launch of the PC2086 range we decided a need for price differences between the 1512, 1640 and 2086," commented Amstrad's marketing director Malcolm Miller. "However, due to the well publicised D-Rom shortage we felt it would be futile to alter prices at that stage. Now that we have been able to secure a more free availability of the chips, the time is right," he said.

THE CUTS IN DETAIL

1512 00 Mono	Down £50 to £499
1512 10 colour	Down £50 to £499
1512 20 colour	Down £100 to £399
1640 00 mono	Down £50 to £599
1640 10 mono	Down £150 to £799
1640 20 colour	Down £50 to £599
1640 30 colour	Down £200 to £899
1640 40 colour	Down £250 to £899

These cuts are likely to prompt similar moves from rivals such as Commodore and Atari. Commodore greeted the news with some disarray observing that its pricing policy has been geared to competing with Amstrad's. And Atari is likely to re-jig its prices. One well placed source said it would be "very surprising if Atari didn't have the same prices at the same time".

Hacking in the House

Government was last week mulling over the growing dangers to the security forces from hackers following the outbreak of a virus in US military systems in November.

According to the armed forces minister Archie Hamilton, the country's defence computers have been tightened up. However, he was not prepared to confirm any details. Labour promptly accused the minister of complacency - which Hamilton, just as promptly, denied.

Backbenchers, meanwhile, have once more called for hacking to be made a criminal offence.

Move over Big Al

With the claim to being the next Alan Sugar a fifteen year old schoolboy is planning to launch himself into the rough and tough world of business software.

David Bolton has already made in excess of £8,000 from his tailor made PC business programs with such customers as toy chain Carousal. But the "fairly academic" Croydon based entrepreneur is now set to write a program for general use.

"I've usually written for specific uses," he told Express. "People use me because I can do it very quickly. Carousal were waiting months for a pro-

grammer to finish their software but they asked me to do it and I finished in a couple of weeks."

He was programming on a ZX81 at the age of ten - but found it all too simplistic and has been working on MS-DOS for the last few years.

Bolton's company - Associated Computer

Enhancements - was started off with some help from Amstrad and PC distributor Eltec which sponsored him with Amstrad hardware. Now ACE is writing a program which can link roving salesmen to their head office. "I hope to be the next Alan Sugar," concluded Bolton.



• Bolton: Alan Sugar 2?

Coders claim top spot

Code Masters was crowing itself red in the face last week after the news that it has regained its long lost position as Britain's top selling games software house, according to Gallup.

The release of its fall price debut Four Score Sims and a handful of new budget titles has bumped the young company into the much fought over pole position.

Some had viewed the Code's slip earlier in the year as a classic example of sitting on laurels. Such old stalwarts as Jet Ride Simulator were becoming less popular and the Daring Brothers - who ran the firm - were left with little in the way of new games.

"We're where we should be and that's number one in the open market," boasted Code Masters' operations manager Bruce Swinton. "And that's not just because we sell a lot of budget games. Four Score Sims is selling in droves."

Sampling samplers

51 musicians are being promised an upgrade to Microdeal's Replay 4 Sampler in the next few months.

London based ARI is developing Replay Deluxe which includes a 10-bit analog-to-digital converter, a 12-bit digital-to-analog converter and a sample length of 22 samples on a 500K and 40 seconds on a 104K. It will cost £250.

More info on 0725 68030.

Did you know?

Some people worry about radiation from monitors, but this is ridiculous. The Sydney Morning Herald says even at its computer for ten computers each hour "for health reasons..."

OUR OPINION

PC200 disaster

If nothing else, the shambles over the PC200 unstacks of nothing so much as the old days of Sinclair Research. Attention to detail never was its forte - not when there was a mad rush to get a product out.

In part, it's a similar rush that has caused the Amstrad/Comet difficulties. Amstrad has always been peculiarly sensitive to criticisms about hitting its street dates.

And it has to be said that the chip shortage hasn't helped Amstrad, though that is not in any way an excuse for incomplete packages turning up on retailers' shelves. D-Ram crises in any case, have nothing whatsoever to do with operating software, joysticks, games and manuals going awry.

But now is not the time for travelling through the reasons. What is needed is action - and fast. It is simply not good enough for Amstrad and Comet to bicker over who is to blame. If you've paid out several hundred pounds only to discover that your computer is unusable, what you need most is someone to take responsibility, get their finger out and solve the problem.

The customer, presumably, is still king...

Tough for SAM

After many months of nods and tips and winks and looks, Miles Gordon Technology (MGT) has finally unveiled its SAM range of computers. Express naturally wishes it all the best. But the SAM faces a tough fight - certainly a tougher one than when it was first mooted.

For the world has moved on from Spectrum technology, as MGT knows. And yet SAM is more than just a better-than-Spectrum Spectrum. For one thing, it simply looks so much more plausible. More substantially, it's that much more powerful, with better specs and more options. It may not quite represent a new generation for computing, but it's more than just a contender.

What will hold it back more than any industry structural difficulties is the firm's lack of marketing clout.

These days, it's the sizzle not the sausage that matters.

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• Spectrum-compatible Coape: First picture

FOUR-MODE COUPE
UNVEILED BY MGT

Pictured here is the first illustration of Miles Gordon Technology's new computer, which has been exclusively released to Express.

The machine, called the Coupe, costs £149.95 and should be available from April. A version with 3.5 inch drive costs £220. It will run most Spectrum software as well as being switchable to three other modes, which do not include MS-DOS.

Cruicially, the range has built ports. The Coupe is the entry level model in MGT's SAM family of computers.

Higher priced models should be arriving later next year. Whilst being Spectrum compatible, MGT is keen to stress that this is its lowest model and simply a foothold for the new machine.

MGT is negotiating with software publishers for programs compatible with its other models - the details of which are still under wraps. However, a DTP package, educational program and graphics pack should be ready for the new formats by launch time.

The disk drive is placed underneath the keyboard at the front of the machine. However, despite being a 3.5 inch drive it is not standard. The drive was manufactured by Cision using its own technology, and is 'extremely thin'. It runs standard 3.5 inch disks, however.

Apart from that, the machine will run cassettes and will be able to accommodate normal disk drives. It features 512 x 512 pixels on screen and sports a palette of 64 colours.

"I don't want people calling this a Spectrum clone because there's so much more it can do. There would be no point launching a machine with technology which is five years old," said joint boss Alan Miles. "I refuse to compare it with other machines because it's a new generation for computing."

It's hardly surprising that Miles is playing down the Spectrum compatibility element. Amstrad has already stated that it will be keeping a close check on its intellectual rights. Miles says that none of them has been infringed.

Some 55,000 of the machines are due to be built in the first year. Sales are expected to split 50/50 between drive and driveless. MGT has been working on the machine for some two years now. The firm's main business is as a mail order firm/ peripherals manufacturer.

Miserable climate hits Atari Show

Bad weather has been blamed for the low turn out at the recent Atari Show. The event attracted 10,000 visitors - 4,500 lower than last Easter's show.

However, compared to last November's show the figures are up by 2,800. "I think you have to compare like with like," stressed show organizer Mike Cowley of Database. "We had rather poor weather and people don't like to queue up in the cold".

The notion aired by some visitors and exhibitors that the show was dull was rebutted by Cowley. "I wouldn't say that. It's a great opportunity to pick up good bargains." Database has yet to release attendance figures for the Commodore Show of last week ago. Cautiously, if figures are good they are released weekly.



• Atari Show: Bad weather, bad news

Horse-racing
duel
nears
winning
post

Cascade's sporting challenge with bookmaker William Hill is nearing the finishing post with the software house marginally ahead.

William Hill had challenged Cascade to try out its horse-racing fixture program with £50 in free bets. The duel was organised through New Computer Express with proceeds going to Children in Need. This far Cascade's Form Master has put the Atariage firm £25 ahead. However, that represents two races won and two lost. Cascade was given something of a free ride by William Hill. The software house has been allowed to

choose races which it feels will work best with the program.

"There are a lot of small races during the week and low quality ones which aren't really any good," said Cascade's boss Nigel Stevens. Cascade has another race to go but even if it loses that one the firm is still £15 up.

For William Hill, Graeme Sharpe said: "It depends on the last race whether they have really won. If they lose then that's three out of the game. We're still happy to accommodate punters who use these systems - but let's hope they're not too successful."

He added: "Systems have the drawback of having to wait for the right race - most punters like a wager every day, or at least every week."



• Stevens: Tipping the balance

Music maeSTro? Here's a bundle

Atari is planning to bundle music studio program Steinberg Pro 12 with the 1040 ST.

The configuration will appear in the New Year at the usual entry level price of £499. The Steinberg 12 costs £150 and is a cut-down version of the

24 - reputed to be the professional's favourite.

Atari has always maintained that the 1040 is the best machine for musicians. The bundle will be sold through the music trade as a 12 track studio. A synthesiser and amplifier is needed to utilise the 'Music Pack'.

"The ST has MIDI hardware so, with the software, you don't really need all the gadgetry of a mixing studio. You simply play everything through the machine and the software does the work," said Atari's Derrick Stoll.



• 1040: Music medium

Manual dexterity

An alternative to Atari's own ST manual is being published by the ST Club.

"If the first one tells you how to turn the machine on, this one tells you how to use it," insists the Club. Your Second Manual for the ST costs £3.95. More details on 0602 410341.

Petrol bomb hits computer shop

A petrol bomb has gutted Chester based computer shop and mail order company Cestrian causing more than £25,000 damage. The firm suggests a competitor might be to blame.

The attacker struck in the early hours of Wednesday November 30th by ripping down the shutters, hurling a brick through the window and then throwing in the

petrol bomb. The shop has been closed down for a week but the mail order operation should be back to normal in a matter of days.

All the software in the shop was damaged by smoke, and staff there are said to be working around the clock to clear up the debris.

"We can't understand why anyone would do this unless it's a competitor who we're hit hard," said boss Ron Donovan. "Even so, that would be taking things a bit far." The Chester Police are currently investigating the case.

Donovan added: "There are going to be a few bi-cops on the mail order side and if anyone has any problems to appreciate if they'd call me." The number to ring is 0284 322606.

Samsung sings praises of new range

Enormous Korean PC manufacturer Samsung is to upgrade its range of IT machines with a price increase to boot.

And the firm's paper white full page monitor has finally been launched. Samsung claims that the £500 monitor is half the price of its competitors efforts.

The SPC3000 PC will now sport a 102 key keyboard rather than the standard 84 model. And the machine has been upgraded from a speed of six and ten MHz to eight and ten MHz.

Now called the SPC3000i the entry level two drive has been increased from £599 to £749 with the 20 Meg hard disk rising from £999 to £1,049.

Meanwhile, it also looks as though Samsung's earlier tested PS/2 machine won't be appearing at the Which Computer? Show early next year after all. Sources suggest the firm is stepping back and re-evaluating the whole PC upgrading scene. Samsung thought is preparing to keep plans under its hat.



• PC3000: Priced up and upgraded

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Software (Print Standards) etc. (software on your printer)	12.00

All the above QL software is produced by Sector Software. Ask for our full guide/catalogue of our QL software. A 15 page catalogue of Amiga products is now available. Phone or write for a FREE copy

BULLETIN BOARD

We are now running a bi-monthly bulletin board on 0772 454328 (open to 8am weekdays and all weekends which is mainly QL specific but includes a Z88 section) and is open to include an Amiga section.

We are at the moment writing Amiga to Z88 file transfer software and Amiga to QL software. If you are interested in either of these then please contact us for more details.

We stock lots of many products to mention in short, (see have a regular 4 page advert in QL World) each month, as please send us a SASE or ring for our free product guide and price list. The next Z88 Bulletin is to hold on December 15th at the usual Herts/UKs, London, see us there as usual on staffs 31, 38 and 50.

A goods ordering section is now available on the Bulletin Board, so goods can be ordered by Modern.

NORTHERN SINCLAIR SHOW

Due to a lack of previous shows in the North for Sinclair machines Sector Software are to be organising a Northern Sinclair show around Preston in Lancashire (just 28 or 29 Me) in about March, anyone who would like to be mailed with details or any Spectrum, QL, Z88 companies or peripheral suppliers please contact us for details.

We have a range of QL, Spectrum, Z88, and Amiga spare parts including service manuals, ring for prices on individual items.

SECTOR SOFTWARE are always on the lookout for Good quality programs for the QL, Z88 or Amiga, if you have written one then please contact us.

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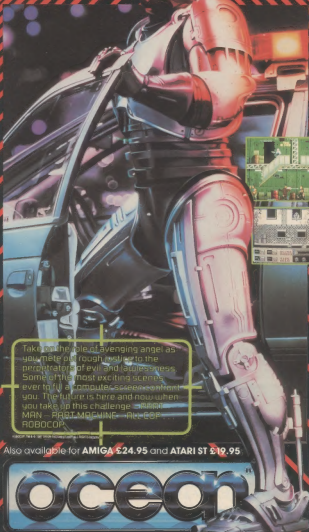


Amiga

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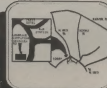
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FRUSTRATION!

How Amstrad's Sinclair PC200 launch led to chaos at Comet



• PC 200. Great interest, greater problems.

B up a new computer and what would you expect when you opened the box? You'd hope to find the machine there, yes, and also the manuals, and the disks you need to get the thing up and running. And if the machine was being advertised with a valuable bundle, you'd expect that to be present too.

Some buyers of Amstrad's new Sinclair PC200 had a more frustrating story to tell last week. Somehow, through an extraordinary lull-out, the computers were turning up sensibly short of their vital parts: manuals, operating software, and bundled games.

No, the problem did not hit every branch. And yet, Comet's salesmen are making it clear to most prospective purchasers that there are problems. Nevertheless there's been a serious slump which has left customers gnashing their teeth.

The autumn build up

The sequence of events were like this: the PC200 was announced by Amstrad the day before the Radio City Personal Computer show in September. By using the Sinclair name - which is owned by Amstrad - as a low-cost IBM compatible, the company hoped the machine would score for use both as a games machine and serious computer.

Amstrad caused more surprise by stating that until Christmas Comet would be the only high-street multi-store to stock the machine.

Amstrad 250 sales then flown into the country for use as display models in Comet branches and Comet ran national advertising highlighting the PC200. The machine was said to have created "considerable interest" and customers were invited to place deposits to secure themselves a model for when full supplies started.

Amstrad blamed

Then the problems began. Many Comet stores did not receive their supply of machines at the scheduled delivery date. And when packages eventually turned up over the last few weeks, many had items missing.

Last week Express contacted Comet branches in London in Glasgow, Birmingham, Manchester, Norwich, Newcastle, Sheffield, Bolton, Chelmsford, Oxford, Gloucester, Bristol, Stoverage and Swansea. Only the last three had the full bundle.

Despite the problems some buyers were allowed to hand over their money for a machine that - as it stood - was basically unusable. And sales staff had the frustrating task of having to arrange subsequent separate delivery of the missing manuals and software.

Comet says Amstrad is to blame. A spokesperson told Express: "Amstrad don't deliver everything in the boxes and so do a cock up at their end - a complete advertising considerable assistance since hand-over manufacturer and high street chain will usually claim to be the best of parts through half or high street."

Many of the sales staff we spoke to echoed this frustration. One said: "We're annoyed because it means we can't sell the computers. You can hardly have them in display when the manuals and software are missing. On the first time I've seen anything like this happen - I don't know what Amstrad are playing at."

Ludicrous suggestion

Amstrad themselves have been keen to play the matter down. Marketing manager Anthony Sathell told Express that only a tiny number of early associates had been affected and that Comet had since been supplied with missing items.

Asked how it was that many shops were still complaining of shortages, he said: "I can't comment on Comet's distribution."

But he said it was absurd to suggest there was any dispute between the two companies over the latter.

"We're doing millions of pounds' worth of business with them. There's no way a thing like this would cause any problems."

Sathell wouldn't be drawn on whether Amstrad had knowingly delivered machines with items missing.

But he described an "indivisible" suggestion that Amstrad might have rushed out the PC200 as a slipshod

decision to meet Comet's delivery guarantees and to exploit the festive pre-Christmas market.

Were going to be introducing 15000 computers shortly. We're not about to do anything in a slipshod manner."

Industry observers point out that numerous computer launches into the consumer market have had teething problems. Earlier Sinclair machines (before Amstrad bought the name) were notorious for being delivered to the High Street months late and early models of both the Atari ST and Commodore Amiga suffered from various glitches.

Amstrad however has a reputation for launching products properly. So it's more than surprising that some

The PCW story

Amstrad's problems over the PC200 follow hard on the heels of another supply problem this time relating to the Amstrad PCW 8512.

A batch of the machine was shipped in from Germany. Unfortunately the imported models have a different power pack, making them impossible to connect to devices such as modems and light pens without the purchase of a separate adaptor.

packages were shipped in unusable state.

By week's end, however, there were signs that the situation was being brought under control. Comet confirmed that the missing tapes had been ordered and sent to their distribution centres. These will be posted on to the shops "as soon as possible". Comet has promised an apology to those customers experiencing difficulties via a letter and to sort out any arising instances. ■

TWO TALES OF WOE

Here are the experiences of two Express readers who tried to buy a PC200. You can read their full on page 13

Mr E Ingrams of Paisley in Scotland went to his local branch of Comet and was told by the salesmen that although the monitor would be another 10-14 days before delivery, he could get by in the meantime using his own TV.

But when he got the machine home he discovered no manuals, no operating system and not even the lead needed to plug into a TV.

Despite a return to the shop and a furious protest phone call to Amstrad, he was still, last week, waiting for his machine.

At the other end of the country Mr D Mitchell of Exmouth in Sussex has a similar tale.

He was informed when he paid for the machine that the manuals were missing, but it wasn't until he got home he discovered that there was also no operating system and therefore no way of using the machine.

After trying other local branches of Comet, he called the original shop again and was told he'd have to wait seven days.

Last week he was still waiting.

Want to buy one this week?

By the time you read this, it is likely that many branches of Comet will be able to supply you the package in full. But do check carefully that all the constituent parts are there before parting with your money.

That's what you should get for £299:

- The PC200 computer itself
- A mouse
- A lead to connect up to your TV
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COMET NIGHTMARE 1

I recently decided to join the growing throng of PC users and accordingly, from my local Comet store, purchased a Sinclair PC 200.

Eager to try it out, I got home and opened the carton. The salesman had already explained that the monitor would take 10 to 14 days to deliver. However I could struggle in the meantime with the TV set - but this was not to be.

For from being ready to use, I discovered that there was:

- NO operating manual
- NO operating MS-DOS software
- and NO leads.

So back to Comet. After searching through the rest of his stock, to and behold none of them had any of these.

"We will issue to order them from Sinclair," says the salesman. It should only take a few days.

The few days pass and enquiries result in no joy from Comet. "What" says L. "Amstrad who should value customer satisfaction should like to help."

I phoned Amstrad who told me, "Sorry, Comet should not be selling this model yet."

"But why?" says L. "The model has been launched - surely you can give me some education when I can expect delivery?"

No, sorry," says Amstrad.

So here I am having bought the hardware and software and paid in advance with nothing to show but a useless, inert PC 200.

Come on Alan Sugar. Please can I have the software to use the hardware for which I have already paid and my little cry of "Somebody please help!" CP Ingram, Paisley, Glasgow

COMET NIGHTMARE 2

My day of disaster.

1) Went to Comet to buy a PC200. Comet informed me there were no manuals.

2) Went home and unpacked PC. Lo and behold - no manual. And also, no software.

3) Went to another Comet in town (Keston). They informed me that all the computers received from Sinclair/Amstrad have no manuals or software with them and that the branch of Comet I bought the machine from should have ordered said items.

4) Went home and rang Comet. They have ordered said items but forgot to tell me. I can get them (well for £10 in about seven days time. So I've paid £343 for a machine which I can't use until next week.

D Mitchell, Eastbourne, Sussex

✓ The whole Comet/Amstrad PC 200 fiasco is covered at length on pages 2 and 11 of this issue. Presumably, if enough of a fuss is kicked up, then the problem will eventually be solved.

Those still experiencing difficulties with the machine should contact us in case as possible. Indeed, if there are similar tales of woe about other machines, then please get it covered. We'll do what we can to investigate and solve your problems.

There letters are plenty the best of the week and so qualify for our special Mystery Prize. We could offer a day return to Amstrad's HQ in Birmingham, so that the complaints can be made in person. But better than that, we'll be sending a pile of high quality PC games software to each of you. Or, and they'll have all the requisite pieces in place.

SHOWS ARE RIP-OFFS

I read with great interest your editorial comment on the poor turn out at the Commodore Show. A couple of years ago my son and I attended a Database show in Manchester, where the adult admission was £3. The 'show' was abysmal. It amounted to no more than 20 or 30 small stands and a display of some new hardware. I promptly wrote an angry letter to Database and was sent a refund or the admission price.

My son's (perhaps all the people) feeling dissatisfied at paying £5 for the Commodore and Alan shows staged over the last few weeks should also write and complain. To be charged for admission to what, in effect, is merely a large computer store is in any way of thinking a well executed rip-off. I wonder if this concept will eventually be applied to its logical conclusion and we'll be charged admission to Texaco and Sainsbury's.

Steve Morris, Leigh, Lancs

✓ Shows are an integral part of the computing scene, but the buzz does seem to have gone out of many of them. Perhaps that's because we've all grown used to them: that there is an ever-flowing proportion of visitors and

exhibitors who are there for the first time. Also, the computer scene in general has become more adept at covering new products, which has arguably diminished some of their appeal.

That said, the better ones are more than "large computer stores". The Personal Computer show in September has always recorded year on year increases in attendance. At least it must be doing something right, even if some of the stores apparently aren't.

COMM ON!

I would like to say that your magazine is extremely interesting, and by far the best weekly computer magazine currently on the market. So to you then: feel free to say it - EDU. The wide range of computers that it caters for is a really good idea.

Even if some of them are a little obscure, it looks to me as if Future Publishing is becoming a force to be reckoned with. My only complaint however is the lack of space given over to communications. A little while ago I read an article in one of your older magazines ST Ariga Forum which devoted four pages to comms. The telephone numbers of suppliers listed given in this article were by far the most interesting numbers I have ever got hold of. They gave me access to bulletin



Dear Reader

We proudly present the liveliest, timeliest computer forum in Britain. Write to us about anything to do with computing - just so long as your letters are interesting or angry or opinionated or entertaining or, failing that, short. The week's most impressive episode wins a mystery prize - we try to make it appropriate for the person concerned. Write to:

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Your in anticipation,
The Express Editorial Gang

PS. Our replies are prefaced by a tick unless we largely disagree with what you say. Then you get a cross (and get cross).

PPS. Sorry, folks, no personal replies. We'll print it or bin it.

boards which were really enlightening, and I still telephone many of them.

However, bulletin boards are a subject which is not given much space in magazines, and I think that a regular space of 100s a year would be an excellent idea, especially since they are not machine specific.

I know I write for many of my friends. So come on Express. Give the readers what they want.
Roger Davis, Southampton, Hants

✓ Results from our survey suggest interest in games, bulletin boards and the like is linked to a minority of users, albeit an active one. Having said that, there are good prospects of Express getting further in which case we could provide coverage without cutting elsewhere.

COLUMN WANTED (AGAIN)

I enjoy New Computer Express but it lacks one thing - a column for the 8-bit Alan range. These machines still outlast the QL, BBC and MSX, and unlike the QL are still being produced and advertised. The add game review wouldn't go amiss either.

Steve Mitchell, Lincoln

✓ We try to cater for as many machines as possible. Unfortunately, we're limited by space. It's possible that we'll have an Alan 8-bit column, but it will probably have to go in one year just as the 8-bit was.

OF MODS AND MIDS

As an absolute beginner (and no, sorry, the owner of a 16-bit machine (which I do not understand a thing!) I have only two things to say. As simply as you can, could you please tell me what a modulator is and what the word MCI means, please?

E. Burton, Shearwater, Shetland

✓ Easy enough. A modulator is a device which enables you to use an ordinary TV as your computer display. It converts the computer's output to ordinary TV signals - a box from the modulator will connect into your TV's aerial socket and you simply select new TV channel to tune to the

computer's frequency. MCI (Musical Instrument Digital Interface - but you didn't really need to know that) allows you to program the lines of synthesizers and drum machines into a computer. At a wild guess, you're an ST personage...

SPARE THOSE BLUSHES

At last! A weekly magazine that's worth paying for. Congratulations on your equal coverage of all the major and some of the minor formats. Most magazines just forget about things like the MSX, and although I don't own one, it's interesting to see what's going on in other formats. BUT...

A lot of mags are games machines, but remember the minority who use them seriously. I have a Spectrum +3, but it's used more for business and programming than games. So how about taking Robin Away to cover that side of the Spectrum as well as the games?

Express Vouchers are a good idea, but remove the expiry date and make them collectable and they'll be a much better idea.

Users' programs - instead of short notices in the machine columns, how about one or two long contributions from the readers every week?

Finally, I disagree with Don Griffith when he calls Spectrum "the Shakes of the computer world". The Spectra may be old, but it's still the best value around. Bryan Morton, Bangor, W. Ireland

✓ Robin will be covering a number of serious applications for the Spectrum in the very near future. Even though he doesn't know about it yet.

The Express Vouchers are actually a brilliant idea. Doubtless business mags will be tarrying in and out of meetings with their own schemes even as we speak. But the vouchers are simply not collectable. Since they would not be the logistics of the whole enterprise. Clip 'em out and hang 'em off - that's the principle. Or buy the next issue of the magazine for a fresh supply.

Users' programs would have to be very strong for us to use them. Long programs gobble up pages which can only be of interest to users of one machine. As for Sinclair (aka Spectrum), never

● AFTERBURNER ST: IN DEFENCE

I write in reference to your ST Afterburner review in the November 26th issue.

Andy Stone, your games reviewer has some objections to the technical quality of my implementation of Afterburner on the ST. (I feel that he has a larger-than-life view of what an ST is capable of, and also that he is guilty of not reading the instructions for the game I wrote for him.)

The review stated that achieving a 350-degree roll is almost arbitrary and implies that it's difficult to do. The manual says under the heading "Rolling your F14" that in order to shake off enemy aircraft missiles you must move from one side to the other in quick succession. This does indeed work, and works every time. In fact, a single vulture once the joystick is at one side is all that's necessary! Since rolling is of great importance in Afterburner, one wonders how Andy managed to do a full review if he was unable to roll properly.

Andy goes on to say that "The ground beneath you bears only passing resemblance to landscape." What does he expect out of an ST? Does he have any idea what sort of complex processing is going

on to get a few objects on the ground?

Best in mind that the humble ST, though powerful by microcomputer standards, is no match for an arcade machine with all its custom graphics chips! (I do custom graphics chips!) If Afterburner code has all its own Entanglement and Rotation software techniques, because we just don't have the 4 meg of ROM to pre-store everything!

Do I feel we did the best possible conversion of a very difficult to convert ConDo? You might argue "Why bother?" if the game was so difficult to convert. This is a wild point, and the single answer is that 4 arcade licences are going to continue land they obviously and then at some point the arcade games are going to lose something in the translation to home macros like it is inevitable.

Reviewers will score conversions should be sympathetic to what the microcomputer is capable of and also be technically knowledgeable in what programming achievements have been made. What might not look so great next to a ConDo machine, might be truly outstanding compared to other games of its genre.

At the end of Andy's review, he compares Afterburner to Space Harrier, like comparing apples and oranges.

Afterburner is a fast-moving 3D game where the aircraft and horizon freely rotate about any axis. All the objects rotate and the technical achievement is far greater. He then goes on to say that the ST version is like most complete, and probably the best looking version out. Even Sega's own version on the console is not that good.

As a final note, you used a really good anti-aliasing screenshot of base sets with us ground detail, better textures or buildings. Why? Was it just to prove your point that Afterburner has unconvincing ground detail? The game has 23 stages of colourful ground objects, so why did you use the one being the most uncolourful stage to take you

scoreshots?

Jet Sam, Managing Director
Argonaut Software

Andy Starer replies:

The review could quite easily and fairly have been more critical of Afterburner. I didn't even mention the dual gameplay - Kit Man Hayes does quite well with respect to the Spectre version in issue 3 - so I thought I'd point out what I saw as its other failings.

I would argue that you simply don't need a technical understanding of a product in order to offer an opinion on its merits!

The prospective buyer is only concerned with how closely a conversion approximates the arcade version - and in those terms Space Harrier is a brilliant conversion and yours was disappointing. After all, we're talking about someone considering spending £20 to relive a great experience - not whether sprites are pre-stored or whether it's pushing the ST to its limits.

As for the 360-deg rolling - well maybe your joystick is worthy of Future Publishing is worthy. Or vice I am.

Sorry about the piece. As you say, you know what disasters are like.

PATIENT-SAVE, PRICE CRITICAL

I have been following your magazine for some time and have been very impressed with the quality of your content. I am writing to you because I am a patient of the St. Vincent's Hospital in London. I am a patient of the St. Vincent's Hospital in London. I am a patient of the St. Vincent's Hospital in London.

You might be interested to know that I am a patient of the St. Vincent's Hospital in London. I am a patient of the St. Vincent's Hospital in London. I am a patient of the St. Vincent's Hospital in London.

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mind the car analogy. Just try the old "my machine were a TV programme, it'd be..."

A LONG LETTER

I am a first timer and I can't understand some of the jargon on computers. David Bunn, Wolverhampton

That's not much of a boast. Some of us are eight or nine times and we can't understand the jargon either.

COMMODORE BASHER

On reading New Computer Express I see that you also suffer from Commodore. I went to the show the other week to try to obtain the elusive Moribond J.3. I asked a Commodore rep, Ken Bunn, who replied that it was not there but it being introduced and would be obtainable next week. A friend that came with me at the same time asked another Commodore rep who said not for several weeks.

I then asked LANG at Romford. They asked me to phone next week, and they would inform me when they had made some enquiries - so I duly phoned today and they then replied it WOULD NOT BE OUT TILL AFTER CHRISTMAS!

This J.3 was originally going to be available for the public in SPRING 88. Another wild promise from Commodore! It seems that no-one in Commodore knows what anyone else is doing or saying. It reminds me of the tale of the three blind men.

In this I play that they sell the new 2050 with the J.3 now to push the sales and to help with the people who have bought the 500!

As this seems the usual attitude of Commodore to their customers, I'm also

wondering if the numbering at the show was a Commodore idea - still numbered from 1 to 348 but only 84 stands there! N. Stone, Chesham, Essex

The Commodore crew got it in the nick of time after that you can almost feel sorry for them. Almost.

Still, this case is not substantially worse than other companies promising releases and failing to deliver. Commodore will be releasing J.3 at some stage in the very near future. Almost.

The show comment is a tad unfair. For anything, the event was organised by Database - Commodore is just the sponsor. Secondly, many stands outnumbered more than one stall.

MSX EXTRAVAGANT CLAIMS

I send a few notes to say how I and I know lots of our UK members are very pleased about seeing your support for the MSX. I have had loads of people come in to say who are buying the new Philips MSX2s for Christmas for themselves and their children. Most of these people are by Alan ST and Argonaut users. Believe it or not - the reason is that people are sick and tired of buying Atari and Commodore and finding that they are out of date before they are even plugged into the mains.

At least with the MSX, people can expand the outfit even up to ten years later with a hard disk drive, another etc. - and every plug and socket is standard. It must seem incredible to people that they are spending £300-£700 on minority machines, like the ST, that cannot be updated or expanded later because they're replaced by another model type. People will soon say enough is enough!

The MSX started in 1984 and a bit going strong - although I must admit we do now have the MSX2 - and the MSX2 is still well supported in Europe and Japan while the MSX is so big worldwide, software will be going strong long after STs are forgotten.

Another fact is that software houses can afford to spend more time making MSX programs as there are more machines for that format than lots of other formats. Look what happened to VIC20, CBM Plus4, C64s, Dragon etc. No, with the MSX you are buying for today, tomorrow and next next year - not just one and a half computer shops has sold out its current window stock.

David Webb, MSX International, Spaulding, Lancs

We've had numerous charming, witty and sophisticated letters from MSX owners. So it's refreshing at last to get one that's completely and utterly banal. Many congratulations, David.

ILL PAY £30

Congratulations on the new publication, and I wish you every success with it. Your comparisons are delicious, covering in their wordbooks for fear of trying all their readers to your infinitely superior magazine! I promise to buy it every week.

The layout, style and light mood make for an interesting read throughout, and I for one hope the magazine doesn't change to make way for the robots who draw and write on so - you know, the bouncers who seem to think that terror in the computer press is childish, undignified and beneath them. Schmecks! As an Argonaut owner, may I request that software houses be more thoughtful!

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One thing the computer industry really excels at is selling you stuff you don't need. Here's a look at your software collection - how many programs have you got that have never been used since the day you bought them? Look at the power of your brand-spanning new 16-bit supercomputer and ask yourself how much real use you've made of all this technology?

Desktop Publishing (DTP) can be like that. There's a definite appeal, especially if you're a bit of a techno-nut, because DTP is power computing - high-res displays, great graphics, all those typefaces. And there's something wonderful about seeing a computer display images that look like newspapers and magazines. But are you really going to use it? Am you, or do you want to be, a publisher? Surprisingly, the answer for thousands of computer users is a definite "yes", even if they don't know it yet.

Who needs it?

Just because you don't publish a newsletter, or regularly produce large, glossy catalogues doesn't mean you couldn't make good use of a DTP set-up. Perhaps you recognise yourself among the following:

• **THE HOBBYIST** This group has become a bit of cliché, thanks to the marketing efforts of dozens of publishers of low-cost DTP software, but that doesn't make it any less real. And it doesn't just apply to computer groups: there are thousands of amateur clubs devoted to sport, photography, astronomy, sailing, classic car building, amateur dramatics, parent-teacher associations - just about every activity we indulge in for fun, or at least just done for profit.

• **THE PROPAGANDIST** Something of an 80s growth area, this involves local politics, No Nukes lobbying, and all those millions of people who are trying to save the whale, save the church roof, lower the revolution, or stop the proposed ring road.

• **THE PART-TIME ENTREPRENEUR** Perhaps you run a dais in the evening, or you repair cars at the weekend, or you do dismantling, window-cleaning, woodworking - anything that earns a bit of cash.

• **THE OVERSEAS PERSON** Your business may not rival ICI or British Airways, or Ford, but it's yours, you take it seriously, and you're always on the look-out for anything that's going to help your company, or improve your service.



Publish!

The Beginner's Guide to DTP

Peter Worlock, who's published almost as many words as Rupert Murdoch (and better words at that), explains what DTP is all about and how you can get into it.

DESKTOP PUBLISHING

COVER FEATURE

EX

● **THE EXECUTIVE** Another DTP elite, thanks this time to Apple's TV advertising, but - again - Apple targeted this group because they are prime potential buyers of DTP systems. Business is competition, and you're interested in anything that offers you an advantage.

It should be obvious that these five categories cover an awful lot of people. In fact, if you stretch the definitions just a little, they cover just about everyone in the country.

But a common reaction goes along the lines of, "Look, I run a small, scrappy shop/office/playing

game group/billiard snarkers society. I don't need to produce a newspaper every month."

Indeed you don't. Which leads to the next question...

What is it?

Put it, as it cracker, desktop publishing is simply the process of putting words, or words and pictures, on paper. Nothing less, and often not a great deal more.

The common perception of DTP as the production of newspapers, newsletters, magazines, and glossy business brochures and reports arises because that's where most of the attention has been focused, especially in TV advertising, and in the national press.

Of course, those are useful, valid things to do with DTP, but you can do a lot more than that. Desktop publishing is simply personal publishing, and publishing is just passing information around a few people.

So the amateurs also can produce a catalogue of his or her wares to be handed out to potential buyers. Desktop publishing means it can be very professional in appearance, quite cheap to produce, and it can be updated regularly without costing an arm and a leg.

The danger raster from the role-playing group can produce maps, character bios, adventure scenarios - anything that will help his players to get more out of the game, as well as making his own part easier and better organized.



Glossary

Body type

Any typeface used for long stretches of text, as opposed to headline and display typefaces which are used for short, eye-catching text.

Bold

A variation in a typeface in which the strokes of the letters are thicker and print blacker.

Column

One column of text, or one of a number of columns. The basic division of newspapers, magazines, etc. into one or more columns.

Condensed

A useful type variation in which all the letters are squeezed. This can make a big difference in the quality of design - unfortunately, very few DTP programs support it. What most DTP programs can do instead is simply stretch out the spaces between letters.

DPI

Dots per inch, the measurement of resolution in printers and screen displays. The higher the dpi, the better the quality of the resulting image. The measurement is in use down to only a 50dpi device will output at 2500 dots per square inch on paper. Do not let the fact that most printers produce at 300dpi fool you. Actual, true resolution is 300dpi. Do not let the fact that most printers produce at 300dpi fool you. Actual, true resolution is 300dpi. Do not let the fact that most printers produce at 300dpi fool you. Actual, true resolution is 300dpi.

Drop cap

A useful typographical device in which the first letter of a sentence of text is treated as if it's much larger and positioned so that it descends into the rest of the type.

Em

The common measurement of column widths. It is a 1/16th of an inch, and the column is roughly 10 em wide. It is also used as the width of the letter 'm' in any given typeface and size. It is, therefore, a good unit to use at the start of the paragraph.

Font

The group of letters, numbers, and other characters that make up one variation of a typeface. It does not mean the typeface itself. So Times and Garamond are typefaces. The Times A and Times B are fonts. The Times A and Times B are fonts. The Times A and Times B are fonts. The Times A and Times B are fonts.

Hyphenation

The placing of words at the end of one line to give continuity in the number of characters in a line. This can make words look clumsy and lower quality scores. The words in this line will look clumsy through hyphenation. And there's more space in this line, but this usually means they have any two typefaces.

Italic

A type variation in which the letters slant forward.

Justified

The style of typesetting in which all the type lines sit at both left and right-hand edges. (See also 'ragged').

Kerning

The process of reducing the amount of space between specific pairs of letters to improve readability. Not type should normally be set at 12pt leading - so that there is a gap. The whole space between letters. This adjustment has not in leading reduced and you can see how much less readable it is.

Leading

The vertical space between lines of type. It is important to have enough leading to make sure the text is readable. Not type should normally be set at 12pt leading - so that there is a gap. The whole space between letters. This adjustment has not in leading reduced and you can see how much less readable it is.

Lower-case

The smaller, non-capital letters in a typeface.

Outline fonts

A way of handling fonts to produce better quality output. Computers use bitmap fonts which are just sets of tiny pictures. But outline fonts can be drawn up or shrunk without any loss of quality.

Page printer

The collection term for high-quality computer printers. Not all of them are laser printers. Others are different technologies like LEDs, laser, crystal, etc. and they all will produce laser quality output.

PDL

Page Description Language, a special program that allows a greater degree of printer control, producing better-quality type and graphics.

PostScript and Hewlett-Packard's PCL are the two leading PDLs.

Point

The smallest measure of type size. There are 72 points to the inch, but confusingly, 72pt type will not fit 36 lines to the inch. The point size refers to the depth of the line, as well as the width of the line. The distance from the top of one line to the top of the next, including the space between lines, will be one inch. This type is set and the lineages are not.

Ragged

The opposite style of typesetting to justified, so that lines of type do not line up. It is usually setting in the left-hand margin that can refer to the left. Most word processors and many desktop publishing programs refer to this as justified.

Reversal

Any effect that causes the image of the original text to be reversed, as in the case of a mirror. This is often used in the design of logos and other graphics.

Scanner

A device that works like a photocopier, but instead of producing a page copy it sends the image to the computer where it can be used. It is then used by DTP or graphics programs.

Typesetter

A machine that produces professional-quality type. It is often used in the design of logos and other graphics. It is then used by DTP or graphics programs.

WYSIWYG

What You See Is What You Get - usually applied to software that attempts to display on the computer screen a very close approximation of what will be printed.

Six of the best

The DTP programs to consider for the best value for money. All prices are in £.

STOP PRESS

Amstrad CPC (£49.95), Amstrad PCW (£49.95), BBC (£49.95) and IBM 64 (£39.95)

A low-cost, yet usable package aimed at home users. Includes good graphics facilities. It's a good way to have some fun producing newsletters and the like with a home computer and dot matrix printer. This package is well suited. The package can also be bought bundled with a printer (which costs a lot more than the package itself) for an extra £30.40.

Supplied by Advanced News Systems (Tel: 0925 413501).

FINESEE

PC (£115)

A professional program at very competitive price. Easy to use. Flexible, powerful

graphics and text handling. Can be purchased with a desktop (MS-DOS) and a low-cost scanner (£295).

Supplied by Microvision Systems (Tel: 0415 413501).

FLEET ST PUBLISHER

Atari ST (£125)

A package that is particularly strong on typography and capable of outputting to a wide variety of printers. Available from Atari as a package bundled with Mega ST and Laser printer. Or from Microvision on 01 337 4554. This package is far stronger than Microvision's Fleet Street Editor series. An Amstrad CPC, PCW and PC.

TIMETWORKS PUBLISHER

Atari ST (£99) and PC (£129)

A powerful package ideally suited to fast production of reports, manuals or documents with relatively simple layout. Supplied by Electric Distribution (Tel: 0954 61258).

PAGEMAKER 3

Apple Macintosh (£626.75), PC (£750.25)

The original version of this program on the Mac is credited with launching the worldwide desktop publishing revolution. Now substantially improved and available on PC as well as Mac. Powerful software aimed at professionals. Has the advantage that any DTP formatting bureau will be able to output PageMaker files on a desktop or laser printer. Produced by Aldus (Tel: 031 336 1727).

PROFESSIONAL PAGE

Amiga (£249)

The package aimed at making the Amiga into a better DTP machine than the Apple Mac. Powerful, bounded layout and text facilities. Color facilities and numerous other features. Requires 1MB and is intended for use with at least a laser printer.

Distributed in the UK by HB Marketing (Tel: 0655 444423).

Others to look out for

ST and Amiga owners should keep an eye open for the Macintosh PageMaker. It's a good way to have some fun producing newsletters and the like with a home computer and dot matrix printer. This package is well suited. The package can also be bought bundled with a printer (which costs a lot more than the package itself) for an extra £30.40. Supplied by Advanced News Systems (Tel: 0925 413501).

And the secretary of the hit-tracker association can also produce maps and guides for the club's weekly outings, providing more information for members, and making the walks more enjoyable.

You can use desktop publishing in an endless number of ways.

● **ADVERTISING LEADERS** – get out there! Steep from its anything from your own window-cleaning business, to the spring sale or your good-car dealers, from the church Christmas bazaar to the end-of-term school concert.

● **CATALOGUES** – from the small business to the large corporation, many companies can benefit from having catalogues available both for internal use and for customers. Tie in your own database, or inventory software, and updates can be done quickly and easily.

● **MAPS** – one of the most useful kinds of graphics, maps can be both informative and attractive. Use them in their own right (like the members club), to advertise (to show the proposed new road cutting through the local beauty spot), or as simple helpers (how to find your new showroom).

● **FIGURES** – effective presentation can make the difference between success and failure. Whether you're a small company pitching for a job, or a corporate department trying to land a new contract, or a local organisation trying to sway the crucial planning committee. By clearly laying out your figures, linked to charts, graphs, and diagrams, you're giving yourself the best chance of success.

● **JUST SAYINGS** – as obvious application but a lot confined to large companies. Charts and statistics are natural candidates – but what if you're a specialist company selling an unusual product? An occasional newsletter for existing and potential clients showing how your product is being used, and how to get the best from it, could get you a lot of attention in your market.

● **PAMPHLETS** – another magazine for specialist markets, because most have to be cheap and easy in the science fiction field, for example, the better business are highly respected by authors and professional publishers, as well as fellow enthusiasts. Although they are usually associated with the fields of criticism and review, you could establish your own in any area. Don't stop at making any money but you should find it a lot of fun and very rewarding in every sense except the financial.

What do you need?

The equipment for desktop publishing falls into four categories: computers, software, printers, and other stuff.

COMPUTERS

Any computer, from a Spectrum or C64 to a PC or Apple Macintosh, will let you get going in desktop publishing. What changes in the cost, and how easy it is to achieve what you want.

At a very low level of DTP – producing advertising flyers, for example – as 4-bit machines like the C64 or Amstrad CPC are capable of producing results as good as those from machines costing hundreds of pounds more.

Higher up the scale – producing documents that need professional looking typography and high-resolution graphics – you can still use cheaper computers but their lack of power starts to show. But at this point the quality of software and point-to-point matters more than the computer.

An Amstrad PCW will produce documents as good as those from a PC or Mac. Of course, it will take you longer to do the job, and it might be a frustrating experience, but your readers need never know the difference.

When you get to the level of producing newsletters and brochures, you really need some raw computer power – lots of memory, hard disks, and fast processors. That last to say you don't do it on a machine like the C64, or even a cheap PC clone, but it will be slow going. However, Atari STs and Amigas are perfectly capable.

Finally, at the professional publishing level, you need a Macintosh or a top-end PC, and the bigger

OUTPUT QUALITY

• 9pt DOT-MATRIX

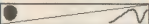
Jagged edges, jagged lines, and unreadable below 9pt, impossible to run "grey tints" behind small text.

24pt HEADLINE

This is 12 point type in the popular Times Font found in most DTP packages.

This is 9 point Helvetica, and is about the minimum possible size for dot-matrix output.

On a laser printer or typesetter 9pt text like this is still perfectly readable, provided the column width is kept quite small.



Can you read this text or are the edges too fuzzy?

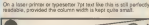
• LASER PRINTER

Near typesetter quality, but close inspection will reveal the dots (500 per inch) which make up each letter and line. The limitations are most noticeable when you run a grey tint behind text.

24pt HEADLINE

This is 12 point type in the popular Times Font found in most DTP packages.

This is 9 point Helvetica, and is about the minimum possible size for dot-matrix output.



Can you read this text or are the edges too fuzzy?

• TYPESETTER

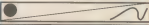
This is the quality professionals will require with even small print. Absolutely crisp and sharp and the ability to produce clean grey tints and perfectly smooth curves.

24pt HEADLINE

This is 12 point type in the popular Times Font found in most DTP packages.

This is 9 point Helvetica, and is about the minimum possible size for dot-matrix output.

On a laser printer or typesetter 9pt text like this is still perfectly readable, provided the column width is kept quite small.



Can you read this text or are the edges too fuzzy?

version in that New Computer Express, like all of Future Publishing's magazines, is produced on expanded Mac II's – no other computer could do the job. You need multi-megabyte memories, large hard disks and real powerful processors.

SOFTWARE

What it comes to DTP your choice of software is usually far greater than your choice of computer.

For the simplest tasks, a standard graphics program will suffice. Most "drawing" programs allow you to mix text and graphics on page although the text control probably won't be sufficient to handle large slabs of text. But if the program gives you a variety of typefaces, styles and sizes it will probably cope with headers, simple brochures and very simple newsletter-style layouts.

If graphics are a secondary consideration you may not need anything more than a good word

processor. There are several available programs on the PCW, ST, Amiga and PC which provide reasonable typesetting control – more than enough for producing well-designed and eye-catching reports.

None do allow you to import graphics into your documents, and a few let you create text in multiple columns. These may be better suited to producing newsletters than some real desktop publishing software. The limitations are usually that such programs don't provide a great range of typefaces, and they will be short on the features that make page layout easier.

Finally there are the DTP programs proper. Because they are dedicated to the task, they have a host of features to make the would-be publisher's life easier. At the least they will support multi-column layouts, allow you to export a variety

DESKTOP PUBLISHING

COVER FEATURE

of graphics and to edit them, and offer a good deal of control over the appearance of text.



PRINTERS

Since the aim of desktop publishing is to put information on paper, a printer is a crucial part of your set-up. Many people assume that you need a laser printer for DTP but that isn't so - there are other alternatives, better or cheaper depending on your needs.

If you want the best output quality, laser printers just merit good enough - you need a true typesetter. Laser printers have a resolution of "only" 300dpi whereas a typesetting machine boasts from 1,200dpi up to 2,500 dpi. A resolution of 1,000 dpi is generally accepted as "typeset quality", so laser printers have a long way to go.

Unfortunately, true quality doesn't come cheap, and a low-cost typesetter starts at around £20,000. But you can still want good quality typeset quality even without that sort of cash to spare. The answer is to send your documents on disk to a typesetting bureau. In descending order of availability, bureaux will generally accept Monitos, PC, Amstrad PCW, Atari ST and Amiga disks.

If you don't need true typeset-quality output, page printers offer the next best thing. In desktop publishing although there are one or two offering 600dpi there is now an economic choice in page printers. The majority are laser printers with prices from £1,200 up to £10,000, but other options include the Canon Cybersprint with prices from £850, and Hewlett-Packard's Desktop, an inkjet printer which offers 300dpi resolution for around £700.

Next down the list are the 24-pin dot-matrix printers. Once an expensive option, they have been falling in price over the last year and are now the fastest-growing part of the printer market.

Models from Epson, Amstrad, NEC Star, and Canon are all widely available at around £300 and offer a theoretical resolution even greater than that of most page printers - as much as 360 dpi.

However, that is theoretical - only the most expensive impact printers can accurately enough to rival laser quality, and they cost as much as laser printers themselves. The other advantages of page printers are speed - about five to ten times faster than dot-matrix models - and near-silent operation.

For the most modest needs - club newsletters and the like - a 24-pin printer can be a good choice, offering an excellent compromise between price, quality and price.

Finally, for those on a very limited budget, are the common 9-pin dot-matrix printers.

Surprisingly, the best of these can produce output quality close to that of their more expensive 24-pin cousins. This is achieved by using multiple copies of the print head and the print head is a dramatic lack of speed - a typical newsletter page could take two or 15 minutes to print, and the task is daunting. But with prices well under £300, they needn't be ruled out.

There is one area where amateur publishers have the advantage over professionals: colour output. Of course, the quality is not going to be high, but neither is the cost.

For very simple colour work, you can use one of many dot-matrix printers which support colour ribbons. These will only give you a limited colour range - from eight to about 22 shades - but a big-

Desktop Publishing

Most people can lay out a letter, or any word processed document, so that it looks neat and businesslike. But as well as that, it needs to look a bit boring. How much better if you could put in a few graphics and add some typographical variation.

But as many users have discovered, when you get that flexibility all too often your previously dull-but-neat document becomes a mess.

Design is a real skill requiring both training and talent. But that doesn't mean your documents have to look appalling by following a few simple rules. You can produce clean, attractive documents that'll at least not give your readers nightmares.

1 Keep it simple.

The most common mistake in desktop publishing arises from beginners trying to use as many features of their software as possible. They throw in every available option, in an endless range of sizes, with graphics dropped in all over the place.

Instead, concentrate on one style of type for most of your text, and only use it - at most - two contrasting typefaces for headlines and other special purposes. Use only a few variations in size, especially in reports and similar documents where three or four levels of importance are usually enough to denote major divisions, main sections within those divisions, and minor subsections.

Newspaper and magazine-style design is much more difficult, but even here you don't need to use dozens of different typefaces. Your main text here should again be sans-serif in type size.

2 Keep it logical

Different styles and sizes of type act as signposts to the reader, so you need to

use these signposts in a logical way. Large headlines instantly denote important subjects, and bold type is more eye-catching than light. Use type that fits the subject and its importance.

Once you've worked out a scheme for your typography - what typefaces are used with which subjects, and how large a heading different subjects should have - stick to it. Don't abandon it for larger or smaller body type just to make text fit the space available.

The rules and boxes to keep related material together and separate subjects apart, but don't overdo it - aim to use just enough design devices as it takes to get the job done.

Keep pictures and other graphics close to the text they apply to, and use them at a suitable size. A picture should be large enough so that readers can see what they're supposed to see, but not too large so that it overwhelms the page. Don't use clip-art too big - these little graphics are meant to add a little relief to a lot of text. They aren't meant to be the showpiece of your document.

3 Keep it suitable

Don't try to design your business reports to look like solid business reports, or a letter for the social club dance to look like the Financial Times.

Try to use type that is appropriate to the purpose. Serif faces tend to be rather old-fashioned, sombre and businesslike, although some have a less rigid, more elegant appearance. Sans serif types are bolder and brazier and give a document a more modern appearance. And there are hundreds of "display" types - styles that have been designed for special purposes. You can make good use of these in advertising leaflets and the like, but they really have no place in a newsletter or a report.

4 Keep it clean

Not an exaggeration is said to be the readability, but a plea for readability. Obviously, including cramping too much into a small space, not leaving large enough margins around your pages and between different lines.

As a rule of thumb, there should be more space between the lines than between the words, and there should be a lot more space between the words than between the letters. Aim to separate different items by at least 1cm, or a sixth of an inch.

Less obvious are certain aspects of typography which govern readability. For example, words printed in lower-case are much easier to read than those all in upper-case (especially if several lines of upper-case type are used), and italics are usually harder to read than normal type. So use capitals, italics, bold and underlined type sparingly.

The size at which you set type also affects readability. Obviously, very small type is hard to read, but large type strains the eyes too. Use large stretches of large type to a minimum. Much of this magazine is set in 10pt which is about the minimum for easy readability. However it is impossible to give absolute advice on how small you can go, because it depends on the layout, the material of printing and the length of the items of text.

Watch out too for the width of columns. If there are too many characters across a column, the type quickly loses its place. But if columns are too narrow justification will be nigh impossible, and the eye tires because it has to do a lot of jumping backwards and forwards.

Deciding the correct column width doesn't depend on physical measurement - it depends on the numbers of characters you can get in a column. Generally, about 35 characters should be the maximum, and 38 the maximum. This consideration alone will help determine the size of type you should be using.

ger problem may be getting your DTP software to drive such machines. A better bet is one of the colour inkjet printers. Canon, Xerox and Hewlett-Packard produce high resolution, multi-colour machines at prices from £300 to £1,000.

OTHER STUFF

Although you don't actually need anything more than your computer, a printer and some suitable software, you'll find more as a desktop publisher aware with some additional equipment. Reading the list, if your computer doesn't already have one, is a must. If you're reading exclusively with text a mouse isn't quite as essential, but for any work involving graphics a keyboard, or a joystick, just isn't good enough.

Choose yours a first-class artist and thesaurus. You'll find your documents will look decidedly dull without some form of graphics. Fortunately, there is a solution in a class of software called "clip-art". These packages are simply collections of pictures which can be cut and pasted into your DTP layout, and include animals, buildings, cars, famous faces, a multitude of objects like birds, tools, books, records, furniture, and trees, and collections of symbols like road traffic signs, pointing hands, arrows and so on.

And under the category of "desirable but not necessary" comes a graphics scanner - a device that lets you copy photographs, maps, diagrams and other illustrations into your computer and then into your DTP documents.

Until recently scanners were beyond the budgets of anyone but large corporations, however a new class of scanner arrived this year - hand-held models with smaller scanning windows and a lower resolution (usually around 300dpi).

However, they produce good quality output and the price is right - around £200-£300. Models are available for PC-compatibles, the ST and Amiga. If you don't own one of these 16-bit machines, it is not lost. There is a second generation of picture-grabbers, the value-priced, 32-bit, hand-held scanning imaged artwork. Operators grab graphics images from a video source like a standard video camera, or your domestic video recorder. With a camera you can, of course, point and shoot any graphics image, including printed material.

The cost of a digitiser is usually quite low - anything from £50 to £200 - but you need to add in the cost of a camera, and they tend to be expensive. But if you already have a video camera, this could be a cheap way of getting extra use from it.

So there you have it. Whether it's for fun or your full-time work, your computer can transform your printed page.

Happy dreaming, happy publishing. ■

Want to know more?

Peter Worlock is the author of *The Desktop Publishing Book* published by Prentice Hall at £12.95, ISBN 0-434-01265-6. An excellent source for more info.

The Disk Organiser

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The Disk Organiser creates a complete library of all your floppies and/or directories allowing you to hold details of all your files no matter where or how they are stored. You may keep details of shared files, files available on networks, or files held by personnel at remote locations. Personnel may request specific files knowing that the data within is what they require, to be sent by facsimile transmission or modem. Very efficient, very impressive.

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Disk	File	Byte read	Free space	Err
HDISK1	DISK1	12 800 000	17 000 000	A
HDISK2	DISK2	12 800 000	17 000 000	A
HDISK3	DISK3	12 800 000	17 000 000	A
HDISK4	DISK4	12 800 000	17 000 000	A
HDISK5	DISK5	12 800 000	17 000 000	A
HDISK6	DISK6	12 800 000	17 000 000	A
HDISK7	DISK7	12 800 000	17 000 000	A
HDISK8	DISK8	12 800 000	17 000 000	A
HDISK9	DISK9	12 800 000	17 000 000	A
HDISK10	DISK10	12 800 000	17 000 000	A

▲ All disks in your library

Filename	Byte	Size	Note	Disk	Printer
DISK1	12 800 000	17 000 000		A	
DISK2	12 800 000	17 000 000		A	
DISK3	12 800 000	17 000 000		A	
DISK4	12 800 000	17 000 000		A	
DISK5	12 800 000	17 000 000		A	
DISK6	12 800 000	17 000 000		A	
DISK7	12 800 000	17 000 000		A	
DISK8	12 800 000	17 000 000		A	
DISK9	12 800 000	17 000 000		A	
DISK10	12 800 000	17 000 000		A	

▲ All files in your library

Filename	Byte	Size	Note	Disk	Printer
DISK1	12 800 000	17 000 000		A	
DISK2	12 800 000	17 000 000		A	
DISK3	12 800 000	17 000 000		A	
DISK4	12 800 000	17 000 000		A	
DISK5	12 800 000	17 000 000		A	
DISK6	12 800 000	17 000 000		A	
DISK7	12 800 000	17 000 000		A	
DISK8	12 800 000	17 000 000		A	
DISK9	12 800 000	17 000 000		A	
DISK10	12 800 000	17 000 000		A	

▲ All files on one disk

- ★ Prints reports on standard continuous stationery
- ★ Prints reports on an enclosed personal organiser stationery
- ★ Prints reports of all files referring to disk/directory on which they're stored
- ★ Prints reports by disk detailing file/folder contents
- ★ Prints reports by folder/directory detailing file contents
- ★ Prints reports listing all disks/directories held in the library
- ★ Prints reports by file type/size
- ★ Prints reports by date created/last amended
- ★ Prints reports detailing all files NOT backed-up

- ★ Shows hidden files and notates them
- ★ Shows all files that are backup files
- ★ Shows you file contents (you describe file contents using notes)
- ★ Stores your printouts in a personal organiser binder
- ★ Shows you free space on all floppies stored in the library

- ★ Lets you update your disk data without losing any previously recorded notes

- ★ Lets you record which files were sent to which people
- ★ Lets you request specific data from a remote location
- ★ Lets you optimize the use of your disks
- ★ Lets you add/delete disks/directories to/from the library
- ★ Lets you save your data automatically or by keystroke command
- ★ Lets you find data by disk ID, filename, filetype, size, date or note

Now you can view all the data about all your files no matter where they're stored and then access your data in a flash. No more loading the wrong disk. No more loading the wrong file. No more searching around for somewhere to store your data. No more excuses for not knowing which of your files are backed-up.

MENU (DISK LIBRARY A)
Add disk to library
Remove items from library
View/Edit library
Print lists
Load another library
Save library to disk
Quit

▲ Main menu

VIEW/EDIT NOTES
Disk list
All files
Use disk
Group of files

PRINT LISTS
Filename/disk
Sub-dir. filename
List of disks
Not backed-up

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Change Options

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What's this eunuchs, then?

Unix has been touted as the next big thing for aeons. But what exactly is it? And what does it mean for ST and Amiga owners? Peter Worlock explains all

After two years of sleepless nights learning to program your Atari ST, you're gipped with terror at the news that Atari is about to launch a new ST with a new operating system. You'd just reached mastery of the Amiga CLI with a shroud of fear left unspelled when Commodore announced its plans for a new Amiga running this same new OS.

You're not alone - even PC and Macintosh owners share your fears. Across the world, personal computer users huddle together in the warmth of their familiar operating systems and cry, "What is this beast?"

But fear not. Express is here to run a soothing hand across your fevered brow, and to reassure them, there! Everything will be all right.

What is it?

Unix is a market operating system that literally "grew out of Bell Labs, one of America's foremost computer research facilities, back in 1970. It was originally designed to be a multi-tasking, multi-user operating system which made a big to begin with. Thus, over the years extra facilities and utilities were added, making it bigger still. A 'complete' version of Unix today requires a lot of memory to run - 8 megabytes is usually sufficient - and even runs this space.

But sure it only half of the problem with Unix. As all programmers know, a lot of code takes longer to run than a little code. And Unix is a lot of code. To get it to operate in reasonable time, you also need powerful computers - 32-bit processors, and fast ones at that.

If you know MS-DOS or the Amiga CLI, you probably won't have much trouble understanding what Unix is. You would, however, struggle to get

familiar with multi-tasking since the Amiga arrived - it's just a process whereby the computer can do several things simultaneously.

Strangely, multi-user computing is not too difficult a concept. You could take a machine like the Amiga and instead of having one user perform several tasks, you allow several users to do one task.

What makes Unix different is that it allows several users to do several tasks each, simultaneously. Now you begin to see why it's such a drain on hardware resources.

And there's one final aspect of Unix that makes life even more complicated. Unix itself was written by computer experts for other computer experts - mere mortals find it impossibly difficult to use. So the various suppliers of Unix have come up with a bewildering variety of graphical front-ends - like the Mac operating system, or Gem - that look similar but work in subtly but significantly different ways.

So but others. Sun/View, John Nix/T offers NoX/Ten, AT & T will sell Open Look, MIT offers X-Window, and there are just the best-known.

Who wants it?

Because it is multi-user and multi-tasking, Unix became popular in large-scale computer installations, especially universities and scientific and engineering environments, and its more or less confined to those places today.

However, it is finding a new home among heavyweight, professional running operation jobs Open Community for example, does all its publishing as a Unix based publishing system because - grows its back-ground - Unix has always been strong on both graphics and text-processing.

A newer development in Unix is business. There are two schools of thought on this one. The first says that more and more businesses need multi-user, multi-tasking computing, and that means Unix. The second line goes like that having spent years working with Unix at University, new recruits take a quick look at what their new employers are using, then make a bee-line for the boss and say "The hell with this stuff."

get me a Unix system?"

The people who don't need or want it are people like you and me - ordinary users of personal computers. Unix is a lot of things, but personal it isn't. Besides, it simply won't run on the kind of computers we can afford (sub-£1,000) and on current systems costing less than £3,000, Unix is a ball and chain, crippling your processor and eating up your disk space.

So why the sudden boom?

In one sense, there is no boom - the "Unix is coming" story has been running for five years now.

What's new is that we're about to get a new breed of personal computers powerful enough to house the boom. On the one hand, PC-computers using Intel's 32-bit processor, the 80386, are dropping to sub-£2,000 levels; on the other, both Atari and Commodore will launch ST and Amiga versions using Motorola 28-bit processor, the 68020, with prices somewhere around £1,500 - £2,000.

Other noteworthy events that have given impetus to the Unix story include the long-awaited launch of the NoX/Ten computer, Apple founder Steve Jobs' latest project, which runs a Unix operating system; and Toshiba's introduction of a Unix portable - something few people would

Atari plans its Unix assault

Why is Atari poised to launch a Unix system? Atari's technical manager, Les Papper, says: "Although our point of contact with Unix is the universities, it's gradually finding its way into more and more large organizations are investing in Unix for the future."

So Atari sees Unix as something its computer range, STs for home, education and small businesses; PCs for mainstream business applications; and their systems for specialised areas in education and business.

We have two types of hardware for Unix, Papper says. The first is the 68030-based machine which runs Unix System V. That's intended for solving Unix users who want "real" Unix.

Second, there's the Transputer-based system which runs Hilix, and Helix is largely Unix.

But we certainly won't be dropping the 105-user system on the STs - we're talking about two completely different hardware lines. The STs run from £299 to £999, while the Unix hardware will be priced around £6,000 when they are launched in the first quarter of next year.

Atari's Unix ST news? Run £6,000, about seeing Unix.

have believed possible just a short time ago.

Whether you think there's a demand for Unix on small computers is largely a matter of personal philosophy. The anti-Unix group believes in personal computing - one machine with all the power in every user. The pro-Unix group believes that multi-user multi-tasking machines are the way of the future, not only in business but for everyone who uses a computer. A third group agrees with the need for MUMs but thinks Unix is too big and clumsy to do the business.

Relax - they'll never find you

American commentator John Dornak reserves a special brand of venom for Unix. It is one of his more printable observations he called it a "hard-to-use, techie-need operating system". The majority of personal computer user would certainly agree with that.

But there's no need to worry. Neither Atari nor Commodore, nor anyone else, is going to ditch its existing operating systems in favour of Unix. However, most manufacturers will offer it as an alternative.

Why? Because even though Unix is rarely found outside of research labs, universities and specialised areas of large corporations, manufacturers like Atari and Commodore hope that Unix will be the ticket that gets their computers in. ■



• Unix on the ST - Only for the top-level specialists

it to do anything since all commands are strikingly different and among the most obscure in the history of computing. For example, the command to copy a file in CP is to get a directory the command is LS (for list), and if you want to type a file to the screen the command is CAT (short for concatenate, apparently).

There's also the multi-user, multi-tasking aspect which needs some explanation. Most of us are

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The Alan Sugar Story

The birth of a nation: the CPC



• The old model Alan Sugar, circa 1984

Part III: William Poel relates the inside story of Amstrad's move from hi-fis to micros

A mstrad was a successful lowbrow purveyor of audio equipment with more knobs and flashing lights than critical accolades by early 1983. Yet within months a new transformed, and not even won its first 'Which? Best Buy' (for a computer of all things). How?

A brief resume of the product line after second Japanese tours reveals the firm adopting the Japanese technique of spotting a trend and then distilling the salient features of an expensive and up-market exemplar into a product that the jury driver and his wife could aspire to, and afford.

That is no mean feat, and displays that Amstrad's greatest strength was from the very inception of the business to recognise what the mass market was asking for, rather than straining some mantrasque pose behind the veil of 'High Fidelity', and ending up as a respected but niche (ie small) marketplace.

There was a period around 10 years ago when the hi-fi marketplace burst both with the 'separates' business. The matched tuner, amplifier, record deck and speakers became the rage, and remained the rage for quite a while as the product evolved through the valve and on to the transistor and integrated circuit. Amstrad produced a range known as the *foreiga*, which employed the features of the desirable but unaffordable, and managed to assemble them together in a box that looked the part.

However, Alan Sugar wasn't really after the accolades and best buy labels from such noble organs as *The Gramophone*. At over, he wanted the mass market. So what's a little hum among friends? The rules of Yiffie has being unscrapped and rubble of copy engines outside the sound that would probably drown them anyway. And the volume control would only get a bit noisy if you kept fiddling with it...

In other words, Amstrad played the percentages, and quite rightly so. Most users would be willing to put up with a few rough edges when the product was basically good value for money.

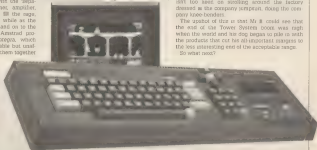
Such an approach to business has gradually been made extinct by tightening consumer laws and, more crucially, the public's attitude towards cheap and cheerful is waning, so the yuppie economy emphasises the 'real' thing. The most retailers have also obliged their suppliers to tighten up considerably, as the costs of dinking with a returned product from a customer are absolutely vast compared to the margin being made in the cheap end of mass goods retailing.

Tower power

The market switch from separates to the Tower system was started, as usual, in Japan, where the boom connected with plans of spaghetti approach (remember the John Chinese ad?) had serious repercussions for the shoebox living style of the average Japanese family. Sugar spotted this as one of his regular spying missions to the Far East, and set about applying the principle.

However, rather than simply tacking co-ordinated separates together in a very ugly stacked audio approach, Amstrad slapped the whole lot together in a single unit, made it look as if it were a set of perfectly aligned separates.

The cost advantage was dramatic: a single power unit, and a single chassis carrying all the electronics. The move coincided with increased automation in the assembly plant, and so a 1989 'tower' system did the job of 2500-3000 worth of separates. This was the product that provided Amstrad with substantial growth around 1982.



• Amstrad's first computer, the CPC. Sometimes the simplest ideas are the best...

and inspired the Shoeburyness assembly plant, and woodworking factory who ship over boxes of as when the chassis and loudspeakers could be taken into locally-made boxes?

The Shoebury plan was also a hedge against possible import restrictions that the possibility of a switch of government might have meant. Also, as Amstrad's remarkable success (relatively) in France has shown, it was a useful card to play in the EEC 'where's it made?' game.

However, quality was not a strong sales feature of the Tower family. Fairly, most things made in

the Shoebury plant would have benefited from the attention to manufacturing detail that Amstrad's for East galleries like Onyx and Pinter brought to bear on the goods that they made for Amstrad under the Amstrad label. Still, even the Far East were indeed recorded from time to time that as most British businessmen have discovered over the years, it is not possible to expect a UK workforce to display the productivity and reliability of Japanese workforce without total Japanese control.

Sony and Nissan have plants in this country that purport to have proved that the UK workforce can be as good as any. But the management regime applied is definitely alien to British techniques and requires commitment and capital investment that would send the average UK industrialist and his bankers down the club for a low ball pink gins to recover their outlay.

And whilst Sugar is definitely as scornful of the pink gins brigade as the most ardent Trotskyite, he isn't too keen on working around the factory downed as the company's jumpstart, doing the copy knee-benders.

The upshot of this is that Mr S could see that the end of the Tower System book was right when the world and his dog began to pile in with the products that cut his all-important margins to the less interesting end of the acceptable range.

So what next?

The failings of the rivals

The CE boom was always rightly regarded with suspicion by Amstrad. By the time, it was the most plumed UK company as a result of its observation of other markets, and was minded of the room advice from its Far Eastern suppliers.

However, as the CE boom loomed (and waxed) the personal computer market became suddenly unappealing.

Amstrad noticed that here was a business where the price paid by the customer was about

MICRO BIOGRAPHY

ALAN SUGAR

sio to save time the risk of the manufactured product. This explained two possibilities. The charitable option is that the people making the product enjoyed some amazing control over the complex issues of the intellectual property (see Apple managed). Alternatively, they were simply meth-maniacs, needing huge margins to pay for the cost of returns and had a less than perfectly focused approach to consumer goods manufacturing.

Arnold Trick

Why Arnold? Well, in the secrecy of casting around to find collaborators with the project, Arnold was not empowered to mention Arnold's name in order to prevent interest being excited and it questionable if it would have been in those days anyway!

Around that time, there was a powerful rumour that the mighty GEC operation was laying with the micro market, and the chairman of GEC is one Sir Arnold Weinstock. If a flash of inspiration, the project was considered Arnold to give all the in-know-all gossamers in the micro business a nudge that what we might be negotiating was a GEC project.

And some day left for it. Subsequently it was pointed out that Arnold is an anagram of Roland Roland Perry, now Arnold's technical manager was project coordinator.

A quick look at Acorn, Orion, Commodore, Sinclair and Design confirmed that the latter view. Thus an operation that brought efficient consumer electronics manufacturing to the game would have a big edge. Next step, pick a product to use as a starting point.

The Commodore Vic 20 was at that time the epitome of getting it about right, and so the Arnold approach was conceived. But, basing in mind the strengths of the Tower Hill approach, Mr B decided to job in the monitor and cassette recorder with a single power supply. And so he could task a complete design that could deliver far more than the competition who did not have the

necessary connections with the traditional consumer electronics trade.

Monitor and box were duly toolled up to its standard that spawned the now famous 'program calculator' (the aimed by Sugar as the hapless Sinclair Spectrum).

Key problems

Meanwhile, Sinclair managed to run the GC with a stylised presentation that was beginning to wear thin with the Sinclair faithful. What they wanted was a real, rugged, plastic Arnold is an interestingly practical was noticed that most of the reported troubles of the proposition were due to keyboards and connection of power supply and cassette recorder.

Along about cheap - what about the inside of this box? Well, that can be difficult. Let's get a closer to knock one up. It's got to be 8 inches wide, by 12 long with facing holes at.

A bid to take on the task from a components distributor and electronics design house, Arnold International led to the formation of the now famous Arnold project team, resulting in the CPC464.

Arnold had no direct experience of micro computers, although it had spent a lot of time trying to make components to the likes of Acorn and Sinclair, and had identified that in any case this was the business of the kind. But Roland Perry, chief of Arnold, knows plenty of ones who had experience of success as a more serious level. Moreover, he could see a constructive role emerging as broker between the down to earth approach of Arnold, and the esoteric approach to the 'posh'

end of the office micro business.

In particular, he knew a group of skilled people who had recently left office technology firm. Data Recall - then formed the Diamond word processing system. These people were Locomotive software and MSJ Electronics, respectively the software and hardware brains behind all of Arnold's better computer offerings ever since.

The 16-bit microcomputer design was based on 6502 technology (hence that's what it was the Vic 20, and 7) and parts had ever been ordered against a shopping list.

However, time was marching on, and it was August 1983. A brief tour of other potential talent revealed that the choice of Locomotive and MSJ was likely to produce the results within the time and (inexpensively modest) budget.

So a switchover to Z80 was duly made having exhausted the 6502 option, and prototypes appeared in November, after starting the project in August. This was as mean fast, especially since the prototype hardware and software largely worked. The first progress meeting was quite amenable, so about the only thing that was working available was an ability to drive the carcer around the screen using the arrow keys.

But even this was a whole lot more impressive than anything that had gone before, and so Mr B. and his people gave a nodding approval, and handed a sign of relief that maybe their plastic mouldings were going to be of some use after all. 'Arnold' received the go ahead to be completed with a view to a launch in April 1984. The rest of the world, of course, would know it as the CPC. ●

NEXT WEEK:

The great leap forward

Having launched the CPC amidst the clamour of his civil, Alan Sugar had a bigger, deeper battle to fight. A certain notion of an ultimate word processing machine was looming...

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SAME DAY DESPATCH

Sprite Master

Atari ST • £24.95 • Soft Bits

15 Langley Street, London, WC2H 8JA, Tel: 01-4334 2630

Another sprite designer. What's so innovative about this one that could possibly warrant its release? Well, it's cheap.

For the uninitiated, a sprite designer is a tool necessary for creating animated images which don't interact with background graphics. Basically these images pass over graphics without destroying what's underneath. Typically, sprites make a game, without spinning, disturbing, objects you have to game. Of course, sprites aren't just found in games. For instance, the GEM poster is a sprite - albeit an uninteresting black and white affair.

User interface

Pretty, very pretty. Simply click on one of eight neatly-designed icons and up pops a window housing various options or an editing screen. The icons have obvious designs which means the manual is virtually redundant.



Throughout the program this user-friendly system has been adopted - other software houses take note. The program interface is generally responsive, which unfortunately can't be said for all editing functions.

Range of features

Drawing facilities include pixel, line, box and circle drawing. The shape is placed in colour in the currently active colour. Sprite Master only works in low resolution (which's wrong with low and high res!) which means you can choose from a palette of 512 and have 16 of those colours on screen at once.

Options also exist for filling an area with a certain colour, clearing the current sprite frame, copying a sprite from one frame to another, erasing



• If mundane sprite pinched from a mundane game from Mundane Software

ing one frame with another, flipping a frame either horizontally or vertically, scrolling a sprite by pixel increments in any direction, rotating clockwise or anti-clockwise in degree increments (badly it's very slow), squashing or stretching, outlining (which is very interesting - I bet you outline a sprite with a colour of your choice) and unoutline.

You can load screens with the more popular art packages - Degas Elite, Neochrome, Art Studio and Paintworks - and then either use the

picture as a background for your sprites or grab portions of the screen to use as sprites.

Documentation

The manual contains enough information for you to get by, but it's nothing special. It's printed using a dot-matrix printer and contains a few illustrations. While it doesn't suck with the editor, it's certainly not as tacky as many manuals.

Verdict

CRIBBED on the disk are two utilities: PICMASTER and LISTMASTER. The former lets you load several picture files which you can squash and then cut and paste between any screen.

The idea being that you use the resulting images as sprites. LISTMASTER converts Sprite Master data into an ASCII format which can be merged into programs written in C, Assembler or any of the popular BASICs.

Range of options for creating and manipulating sprites, good provision for including sprite data into your own programs and unquestionable value for money. Rely about the terrible rotate option.

★★★★

Richard Morrison

Day by Day

Amiga • £29.95 • Digita International

Kelvey House, Barro Road, Huddersfield, West Yorkshire, HD6 3JG. Tel: (0359) 49054. Also on ST, PC.



• Day by Day: Courtesy avoiding WIMP

Day by Day is a computer version of the mass resource for buying a Flexa™ - apart from the status symbol (what status symbol?) - set - that of organising your day to day life. Digita is pitching the package to suit all categories of user - such as business, educationists and home users. But just how much do these users need a computer organiser?

User interface

User friendly is not the operative phrase in D&D - the wide range of easy-to-access Amiga WIMP options are not used. Commands are implemented by single keystrokes (or mouse clicks) and the results are displayed on a softly blurred, expertly implemented display screen. The arrangements for editing text are pleasant to say the least. Finally, there are even the options to resize the window. Although D&D did seem to multi-task (but we can't be definite about it).

Features

D&D recombines a calendar, diary and planner. You can create your own category of entry such as birthdays, bills and letters to be written

which can be flagged by either "urgent", "urgent" or "in the forthcoming week" reminder messages about what you've got planned. You can also take a quick glance at a monthly/weekly summary of the events planned and everything can be displayed on a screen for those who don't like the idea of a pop-up screen.

Documentation

Day by Day comes with a simple manual format 18 page manual, complete with contents, appendices for each machine's differences and an index. It takes the user through each step of using D&D in a clear and concise way, and is suitable for both novice and advanced users.

Verdict

The basic flaw in this program is the fact of its very existence - why bother computerising something that works perfectly well with pen and paper (not forgetting the teacher-bought case to carry them around)? Opponents of this statement possibly have two lines of counter-argument. Firstly, D&D contains a search facility which is useful in tracking down that almost forgotten entry. Lastly, D&D's important date reminders can help the absent-minded. But then again if you're that forgetful (and too lazy to look through your diary), you'll probably forget where you put the D&D disk in the first place.

★

Rik Maynes

HIGHLIGHTS

- Easy to read manual.
- Free 60 day telephone and written support.

DRBACKS

- Fully useless idea in the first place - apart from the search option.
- Doesn't take advantage of the Amiga's WIMP environment.
- Primitive facilities for editing text.

Welcome to New Computer Express's games section, the liveliest, most up-to-the-minute reviews for miles. Here's what we offer that other magazines don't. We:

- make sure more than one person sees each game, so that the verdict can be relied on.
- avoid the shoddy practice of basing reviews on unfinished games.
- break up reviews into easily digested sections relating to scenario, gameplay, graphics etc. - no more hunting to find out what you want to know.
- take version differences seriously. You'll always know what machine the game's being reviewed on, but we'll give you information about other versions too.
- use a simple, no-holds-barred, no-fuss star rating system, where only the very best games get the coveted five-star rating.
- give games of particular significance their own box, together with a flash to say what's different about them.



Victory Road is another in the long line of SNK's Ikari Warrior-type vertically scrolling shoot-'em-ups.

• GAMEPLAY

It's the usual story in this one - if it moves, shoot it and if it doesn't move, still shoot it - as you wade through some harrowing shots in an attempt to deal up the place.



• It looks like you're at home with old face-ache beer.



• Attractive graphics, but nothing new

Along the way you'll find collectable items that yield extra firepower or score bonuses - and also various traps that transport you into a bonus screen, placing you in a head-to-head confrontation with a levelled foe.

• GRAPHICS AND SOUND

Graphics are up to the usual Imagine standard. Sprites are colourful - although some are rather used and abused - and the backgrounds are simple but effective. The only bad mark is the scrolling, which is a little jerky.

Audio comprises competent spot soundeffects for gunfire, explosions, etc.

• OTHER VERSIONS

No details on the other versions are currently available.

• EXPRESS VERDICT

Victory Road provides an enjoyable blast with a good selection of enemies and scenery to give you a hard time. As with other games of this type, it really takes off when played in simultaneous two-player mode. Not worth trying out.

• • •

Rik Haynes



• Competent, but hardly another Iliad

Cascade gives you another chance to save the solar system using your humble Spectrum and a copy of its latest release Ring Wars.

• GAMEPLAY

A long time again in a galaxy far, far away, an ancient and forgotten civilization known only as Ring Worlds started a star trek across the galaxy, ending as any unmarked planet in their path. That is, until a glitch in their system occurred, making them hungry for conquest. Now they're in our solar system and here just waiting to get their teeth into our beloved Earth.

Here's where you come in. Flying your faithful old spacecraft around every planet and moon, you'll blast away any Ring Worlds that are foolish enough to chance their luck in an attempt to find the Ring World and blow it away, before your own escape becomes all but a dream.

In play, your craft is represented on-screen by a control panel and vector graphic display window. Punching up Navigator will send you into a representation of the solar system, with you selecting which planet you want to visit. You then flip to hyperspace - shooting any alien craft that come your way during the space flight there.

Once there, we aim to find either a Moonbase or a Ring World Destroyer - the former is a resupply depot, the latter is a defense mechanism which has to be destroyed.

Each Moonbase gives you a different selection of services such as refuelling your ship, recharging your lasers or repairing your life system - so it's a good idea to hunt around for the base that best suits your needs.

When you've destroyed all the Ring World Destroyers, you're able to have a crack at the Ring World itself, harking high and low for its reactor in a bid to do a bit of damage with your nuclear bomb.

• GRAPHICS AND SOUND

The vector graphics employed throughout the game are

simple, but fast. They break no new grounds in 3D graphic design but perform their tasks admirably.

Audio or the other hand is atrocious, with your laser shot effects sounding like an attack of flatulence.

• OTHER VERSIONS

Dani expect to see the ST and Amiga versions of Ring Wars until at least February - but then again it's taken well over a year for it to be released on the Spectrum.

• EXPRESS VERDICT

Ring Worlds is not terrible, but it is even-to-slightly boring. You just don't get any neuron-shattering excitement as you travel around the 234th moon searching for the right base to resupply you.

Still, there's plenty there for all you explorers, but don't expect it to take over your life today that's enough winging about last week's selection of the all-time greatest games - Ed

• • •

Rik Haynes



Domark finally gives us a chance to play AtariSoft's Star Wars arcade game on the PC. After its indifferent reception as the other computer formats, does PC Star Wars make up for it?

• VERSION UPDATE

Star Wars is a vector graphic shoot-'em-up with you controlling Luke Skywalker's X-Wing fighter and starting off in deep space, blowing away any Tie fighters that zoom your way for losing one of your own shields if you can't hack it.

Once you've taken out enough Imperial scoutships, you'll fly straight towards the Deathstar itself, and travel down its trench while avoiding ground fire and, in later levels, bombers. Live long enough and you'll reach the reactor shaft and hopefully blow it out of the sky - or start down the trench again if you fail.



• Even The Force wouldn't help this version of Star Wars

Later levels introduce a middle section, consisting of short and tall laser splitting towers which have to be shot or flown around - but speeded-up action and increased Imperial firepower are the only other differences as you progress through the game.

The vector graphics are relatively fast but very jerky - and quite often merge together, making the display very confusing.

Audio is - as you would expect - almost non-existent, with only a few spot sound-effects. No more Ben Obi Wan's machine delivery of 'Use the Force Luke' as you make your way down the Deathstar trench.

• EXPRESS VERDICT

Star Wars runs a great arcade game 5 years ago, but it cuts no ice in late 1988. Respective gameplay, sluggish control response and average vector graphics contribute to a rather forgettable release on the PC.

• • •

Rik Haynes

R-TYPE

ELECTRIC DREAMS

ST • £24.99/£6
Also on Spectrum
Out soon on C64, CPC

Mediagenic now gives you the chance to play the home video version of the classic horizontal-scrolling shoot-'em-up coin-op, R-Type, probably one of the most playable, addictive and audio-visually stunning arcade games of the genre thus far.

● GAMEPLAY

The story so far: The evil Bydo Empire is taking the known universe and beyond to the cleaners, and it's up to you in your super-sophisticated mecha machine – the R-9 fighter – to wipe these insidious aliens off the map.

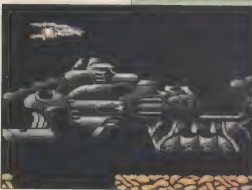
That's enough scenario – let's get down to some serious destruction. In play, you control a fighter capable of not only normal firepower, but also an energy ball of awesome devastation, which is activated by holding down the fire button – the longer you leave it pressed, the greater its strength.

After shooting an enemy craft, you'll get the chance to collect points which yield such desirable items as reflecting lasers, homing missiles or speed-ups. As an added bonus, the first level collected will give you a special weapon – The Force – which is a general dog-eat-dog shield, rain or extra laser platform.

It's lucky you've got these weapons, because the opposition tough – ranging from insatiable mecha (bosses) to weird and horrific aliens resembling something too ugly to appear in a soft film.

Visually are very impressive. The sprites are well defined and beautifully coloured – as are the backgrounds – and are very reminiscent of the coin-op. This is tarnished, however, by the jerky scrolling – but then given the size of the screen area this is hardly surprising.

Audio is the only truly awful aspect of the game, comprising a tremendously chronic title soundtrack with barely adequate in-game sound-effects. In fact we've heard better from a Stock, Aiken and Watsonian record – well almost.



● OTHER VERSIONS

The Spectrum version really gets those reflexes going thanks to an equally good conversion. The C64 and CPC versions are on their way – let's hope they're just as good. But where's Amiga R-Type? Amiga owners everywhere, immediately write to Mediagenic and demand a version for your machine.

● EXPRESS VERDICT

With such a fantastic coin-op to convert, it's surprising Mediagenic didn't sing the praises of ST R-Type a bit

de louder – we didn't see a copy until we posted a software shop review.

This may be due to the fact that the conversion does have a few flaws, namely taking an annoyingly long time to load each level – and worst of all, a really annoying pause between levels.

Despite these faults, ST R-Type manages to replicate its coin-op parent quite closely with its immensely playable gameplay shining through as the best feature of the conversion.

★★★★

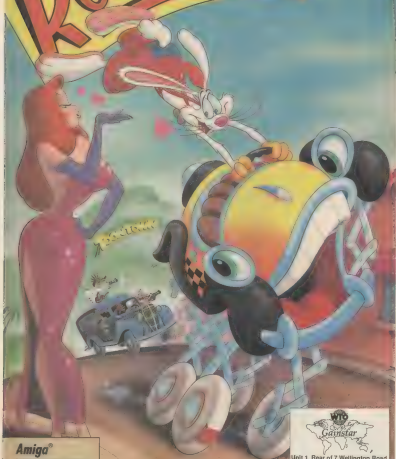
Rik Haynes



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We Accept
EXPRESS
VOUCHERS



Microcades' newest Amiga offering is Turbo-Trax, a racing game that should suit all those closet fans of the top. But will it attract any new driving fanatics?

● **GAMEPLAY**

The game follows the principle of the Scalextric toy: different pieces of track are joined together making a race course which you and a computer-controlled opponent (or second player) race over in one of a selection of eight cars.

You start the game by either designing your own course or playing on one of the five default circuits. There's also the facility to save your masterpieces in auto-track design for later use.

Once that's over, you actually get down to play as you guide your car around the circuit making sure you stay clear of the centre power supply if you don't, you'll get a spark and a time delay! You're just trying to get round in the fastest possible time - and that's all there is to it.

● **GRAPHICS AND SOUND**

The graphics consist of small, sparsely-animated sprites - but at least the scrolling is passable.

Audio is almost nonexistent except for a few unusual and unexciting spot sound effects and a terrible rendition of the Sunday Grand Prix TV show soundtrack on



• The real Scalextric is a million times better

the title page.

● **OTHER VERSIONS**

No other versions are planned at the moment - we aren't sure why!

● **EXPRESS VERDICT**

Nice idea, shame about the game. Although it may appeal to hardened fans of the toy, it's no where near as much fun to play with.



Stik Haynes



Latest in the long (inexhaustible?) line of Amiga strip-n-ups is this Yuletide offering featuring the ample virtues of page 3 girl (and Barbarian prop) Maria Whittaker.



French company Coktel's first release on

this shore features some astounding graphics and an original scenario being based on an 18th century sugar colony! You are the leader of a bunch of rebellious slaves out to make an honest escape. Do Coktel really have the vision to carry off a strategic role play game that has political struggle as its central theme?



• Looking out for slaves to sweep in on the sugar colony



• But you'll need some combat skills to pay the price of freedom

● **GAMEPLAY**

First off you choose between delectable, rebellious and lenient game modes and opt for a set of attributes to customize your role as leader: your constitution, charisma, and abilities to start fires and climb. From there on you sit back playing as many slaves as you can - and as Freedom is subtitled Rebels in the Darkness, most of this involves wandering around their huts at night.

The colony has 204 slaves split into 14 huts of 10 male slaves and 6 sets of 10 craftsmen. You have to build up your confidence points, and then your persuasiveness, by consistently making the right decisions and successfully adapting strategies. It's also

necessary to build up allies - here there's a choice between the craftsman, witch doctor, medicine man, messenger, monk and anthropologist.

You proceed with a rebellion by engaging in arson, climbing, picking fights, fighting, rendering characters harmless and making more slaves. You're up against a master-over, a master-overlord, 3 types of colony manager, stewards and farmers. And what seems like hundreds of dogs which should be the first of your hells.

You can use the pathfinding menu to find your enemies, call up the advice of a seer who's conveniently in the neighbourhood and check up on your men, the victims and the damage you've inflicted. Successful rebellion needs to be conducted before dawn and is measured by the amount of complete conquest you're responsible for. There's no two ways about it - Freedom relies on armed struggle.

● **GRAPHICS AND SOUND**

Freedom is visually very strong, with extremely colorful locations looking as though they could grace an advert for the Caribbean. Most of the action takes place at night, this only serves to add to the sense of atmosphere on hand. Combat sequences are especially well drawn, with animated sprites engaged in mortal wars looking against very pretty backdrops.

The game is essentially mouse driven and relies on detailed drop-down windows and menu bars. Sound is competent too - the drum-beat backing theme providing a sense of the impending battle.

● **EXPRESS VERDICT**

Combining the structure of a wargame with strategic and tactical phases, with aspects of role-play such as the creation of characters and manipulation of their skills, Freedom is certainly different in terms of its subject matter. It's probably sell better on the continent than here, though, since the British don't even admit to having had an empire based on slavery let alone the nerve to depict a game about it. Worth checking out if you feel like some radical role-play.



Andy Storer

● **GRAPHICS AND SOUND**

The graphics are less than inspiring, consisting of rather clumsy-animated desktop renditions of Maria variously reclining, laughing, posing, swinging etc, while at the bottom of the screen is a grocer (butler?) playing area where your cards are dealt slowly and severely.

Yes, that's right - no sound. We recall the legendary Amiga Strip Poker 2+, which at least had the pleasant sound of riffling playing cards to accompany all the heavy breathing.

● **OTHER VERSIONS**

Also on the Amiga, the 800 versions are the ones to look forward to. Strip Poker with 800 graphics - can you imagine it?

● **EXPRESS VERDICT**

Disregarding the question of taste (whether you can or cannot), Maria Whittaker's Christmas Box is not a good game. Flesh-fetters will be disappointed to learn that coy Mario refuses to divest herself of all, unlike the dances in Amiga's earlier efforts, while the subterranean gameplay is unexcited. And once you've won that first hand you're returned to the menu screen for another go - rather odd when Amiga's part, seeing that you'll probably never play the game again.



Red Lawton

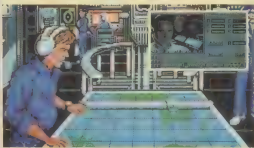
Future Perfect Pixels

This week's previews certainly look a treat. Andy Storer ventures from the dungeons of Middle Earth to the oceans of outer space — and lives to tell the tale.

688 ATTACK SUB ELECTRONIC ARTS

As you can see, 688 features stunning 3D graphics and digitised pictures in a simulation where you're up against a multitude of submerged, surface and airborne targets around the globe as you command either a US Los Angeles or Soviet Alfa sub. Nice to see you can choose your politics! You can also play

the two different scenarios against another player down a modem so you could get truly global if you wished. There are also digitised sounds of sonar and whale songs to compound the tension. It'll support up to 256 colour VGA cards too — for all you hi-tech PC owners out there.



• After sizing up the action below, you turn to your crew for assistance.

PROJECT FIREFIST ELECTRONIC ARTS

The release of a science-fiction horror movie set in outer space and featuring more animation, close-ups and fades for C64 owners sounds as though it should be a must. You're after the Prometheus, a research vessel holding genetically altered labourers who are meant to be out there mining moons and asteroids. But, as per usual in such situations, everything has got completely out of control and guess who's been assigned to clean up the mess? And you won't be needing a brush and pan either.



• A spot of sanitation off Saturn as you sort out a few mutants with your C64.

CHAOS STRIKES BACK IMAGEWORKS

Back in March, Dungeon Master's release took the ST world by storm and prompted Microsoft to claim it sold to date in five ST owners — based on sales of over 30,000. Although Amiga owners are next in the queue for the descent to the depths, Imageworks has released Chaos to present ST owners with a further five levels to explore. In addition, this package features a character portrait editor enabling the player to change the appearance of their party. Planned for release in autumn '89 is Dungeon Master II — a sequel set, curiously, in outer space.



• Deeper and deeper into the ST's dungeon.

BLASTEROIDS IMAGEWORKS

What looks as though it could be a very good conversion of the arcade original is set for release on every format this side of Pluto early next year. Possibly the most interesting aspect of the cloning is the fact that the graphics have been directly ported over from the slabs of the coin-op machine itself. How these will copy to the Soccy must be open to debate but then stranger feats have been successful — check out Afterburner for instance.



• With a title like Blasteroids you must have a good idea of the task awaiting you.

WAR IN MIDDLE EARTH MELBOURNE HOUSE

Hot off the press this week is an Amiga screenshot of a strategic role playing war game based on Tolkien's trilogy Lord of the Rings.

The game looks and sounds a treat (you'd better be pretty fond of hobbits though). Coming on two disks, all controls can be activated by mouse using icons and windows but certain hobbies are available in make life even easier.

The game is composed of three levels — Full Map, Cam-

page and Animation — which correspond to magnifications of the wax, starting at overview and zooming down to individual characters' actions. You can flick between each at will and enjoy the variety of high-quality digitised pictures and music accompanying each location. Of special note is the animation level where you can watch fully-animated figures moving against digitised backgrounds.



• The map screen in War in Middle Earth.

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Two by two

Baffled by binary? Don't understand 16-bit talk? Peter Worlock delves into the mind of a micro...

FOR MANY of us, binary arithmetic was a yawn in school maths lessons. It seemed irrelevant to the real world, how doing sums in Roman numerals, when everybody and everything worked in decimal. That appears to be even more true today, when our monetary system has long been decimalised, and we are slowly and painfully being dragged into metric measurement.

Everywhere, decimal is king. Everywhere, that is, except in computers. Most beginners must wonder why the same numbers, and such funny numbers, crop up time and again in computers: 64 or 32 kilobyte memories, 1,024 bytes to the kilobyte, processors with 8 or 16 bits, computers with 8 or 16 or 32 or 256 colours. It decimal was truly king, surely we'd have 10-bit processors, 500K memories, 1,000K disk drives?

The sad fact is that, behind all these apparent power and sophistication, computers can only operate in two. In the computer world, "binary rules."

This rule derives from the very nature of computers, which are digital devices - everything is reduced to two states: off or on, high voltage or low voltage, 0 or 1. Now, that might look innocuous, but it actually makes life as a computer if you're designing computers.

For example, a binary system makes for very efficient memory: you just mark some voltage as there and as long as it remains charged, it's on. When the voltage empties, it's off. If you were designing a decimal memory system, you'd have to have ten levels of voltage, and if a tiny bit of the charge leaked away, the value to the memory would change. So a decimal system would be far more complex and less reliable.

Counting higher

With a single digit, a binary system can count to two. If the bit (in connection of binary digits) is off, it means zero, and if it's on, it means one.

But counting to two is not particularly useful, so computer use strings of binary values to denote higher numbers, in the same way that we use strings of decimal values. Counting from right to left, the number 1,500 means one single unit, on tens of units, five hundreds of units, and one thousands of units.

Similarly, computers build up higher numbers in strings of binary digits, or bits:

Bit	0	1	2	3	4	5	6	7
Binary	0	1	10	11	100	101	110	111

It can be seen that the addition of each extra bit allows us to describe a number up to the next additional power of 2. So that two digits allows us to count up to 2 to the power of 2, or 4. Three digits to 2 to the power of 3, or 8, and so on.

Somehow along the line, computer designers agreed that a group of eight bits would be the standard "chunk", and this chunk is called a byte. A collection of eight bits gives us 2 to the power of 8 numbers, which is 256 values ranging from 0 to 255. If you've ever dabbled in BASIC programming, you'll know that you can't POKE a value higher than 255 into a memory location, and the byte limitation is why.

Already, certain aspects of the binary system explain certain things about computers. For example, why the next step up from a simple black and white display is not three colours but four. The answer is that to define three colours takes two bits, but two bits also gives you four values so you might as well use the fourth colour.

Similarly, the next step up from eight colours is 16, because it takes the same number of bits to describe 16 colours as it does nine, or ten. If you look at the colour maps to anything less than 16, you're simply wasting the computer's capacity.

If that isn't clear, the following table shows how you can get between 8 and 16 where out of just four bits:

Bit	8	9	10	11	12	13	14	15
Binary	0000	0001	0010	0011	0100	0101	0110	0111

And since computers always count from zero, the number 15 gives you the 16th value.

The size of the byte also has other implications for the computer. For example, since the byte gives us 256 possible values, you can have up to 256 different characters in a computer's character set.

Memory matters

Computer memory size is also governed by the binary system. By now you'll recognise the pattern in the development of microcomputers: the old Apple II's and Commodore Pets had 8K, the Sinclair Spectrum had 96K, the BBC Micro had 32K, the C64 had 64K, the QL had 128K. STs and Amigas jump to 512K and 1,024K.

These numbers derive from the size of the computer's address space. If you give a computer an 8-bit address space, you can only identify 256 bytes, which obviously isn't very useful. However, if you make the address space two bytes wide you don't double the number of locations, you increase it, from 2 to the power of 8 to 2 to the power of 16, or 65,536 locations, which is 64K.

All of the early computers - the Spectrum, the C64, the Amstrad CPC - use 16-bit address spaces giving them a theoretical maximum memory of 64K. Some use less than this because they were designed at a time when memory was expensive. Most modern machines, like the Commodore 128 and Amstrad PCW have more - 128K, 256K or even 512K, but they do this by cheating, using two or more different chunks of 64K. This is a handy dodge, but it means the processor can never see both chunks at the same time.



Carrying data 16 bits at a time

Technobabble

A weekly assault on computer jargon

- ASCII used to stand for the American Standard Code for Information Interchange but today it just means a way of passing information around.
- Pronounced "tekey", the code allocates numbers to 128 different characters - all of the alphanumeric characters, and around 50 special codes that should do standard things to computers, printers, and other devices. Because the code is standard, you should be able to use a computer to print the character 65 and get an "A", and similarly any other character should print "A".
- The exceptions to this are very easy.

that should do standard things to computers, printers, and other devices. Because the code is standard, you should be able to use a computer to print the character 65 and get an "A", and similarly any other character should print "A". The exceptions to this are very easy.

ASCII

Commodore computers, including the C64, which reluctantly stuck to something that was almost but not quite ASCII. Since it was based on the PET, the Commodore codes became known as PETSCII, pronounced "petsey" because they're a bloody nuisance.

The new generation of 16-bit computers, like the ST and Amiga, use much bigger address spaces, allowing them to address 512K, 1,024K all the way up to 8 megabytes without flapping. This is one reason (although admittedly a minor one) why a 512K ST is faster and more flexible than a 512K PCW.

Processor power

The binary system also lies at the root of one of the most confusing arguments in computing: the real differences between 8-bit and 16-bit computers, and whether a machine like the ST is really a 16-bit or a 32-bit computer.

The power of a computer like the Spectrum as the result of two factors: the size of the processor and the size of the data bus. (The data bus is simply the collection of wires along which information travels between the processor and memory.) A 16-bit data bus can carry 16 bits at a time.

With other computers, the argument was very simple. Machines like the C64 and the Spectrum have 8-bit processors - they can hold and manipulate numbers 8-bits wide. Similarly, their data buses are 8-bits wide, since there'll be no point in fetching and storing 16-bit words of data when the processor would have to ignore half of it. So most machines are very definitely 8-bit computers.

The first problematic system was the IBM PC. It uses the Intel 8088 processor which is a 16-bit processor: it can manipulate numbers twice as wide - two bytes wide - as an 8-bit processor. However, it had only an 8-bit data bus, the same as earlier computers, which means that it takes two attempts to fetch enough data from memory to fill the processor.

The PC can accurately be described as a 16/8-bit computer.

PC AT-compatible uses the 8088's bigger brother, the 80286 which is a 16/16-bit processor.

Next came the Atari ST. Commodore Amiga, and Apple Macintosh, all using Motorola 68000 processors. The 68000 is a 32-bit processor, so it can handle four bytes at a time, but it has a 16-bit data bus. Again, it takes two attempts to fill the processor. Thus machines using the 68000 are 32/16-bit machines. Just to confuse the picture, when Sinclair built the QL, he opted for Motorola's cheaper processor, the 68000. This is a 32-bit processor but it has a tiny 8-bit data bus. The QL could be called a 32/8-bit machine.

The very latest machines are those using Intel's 80386 and Motorola 68030 which are 32-bit processors with full 32-bit data buses - use 32/32-bit machines.

So what does all this mean? How much more powerful is an Amiga than a Spectrum? Is an ST more powerful than a PC-AT?

Ultimately, it all means nothing much at all. There are always other factors - memory size, disk access speed, screen display, available software, and how well that software exploits the machine - that matter more to people who use computers. ●

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HELP! Printer problem

I am in the 60+ age group and need some help. I have a Spectrum +5 and an Amstrad DMP 2000 printer and want to LPRINT UDGS (user-defined graphics). I have a UDGS designer program and they print OK on screen, and using the COPY mode I can print them out without trouble.

Can you please explain how to LPRINT CHR\$(144) etc, when my UDGS are in the printer. I hope you can help (it's a great new mag).

Bill Fewless, Northwich, Cheshire
 • Whether or not you can convert this problem depends on a single feature of the printer. But first, the reason why you have the problem is the first place.

All printers use a 0000 or least standard ASCII character set, but the ASCII code only defines the first 128 characters. The codes from 129 to 255 are not for grids. Some printers define them as a full alternative set of italics, or the IBM graphics set, or unused.

When your computer sends a character to the printer, what

it actually sends is the code. It neither knows nor cares what the character looks like. Similarly, when the printer receives the command to print, say, character 65, it prints the character with that code number. It's a matter of blind faith that the computer and printer are using the same code number to describe the same character.

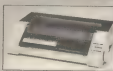
Obviously, user-defined graphics don't fall into this scheme. The computer knows what character 144 looks like because it has the definition, but your printer hasn't the foggiest.

So the solution depends on whether your printer can accept user-defined characters. I don't know whether the Amstrad DMP's easily, but it is a common feature possibly among Epson-compatible printers. Check your manual to see whether it supports user-defined characters or downloaded graphics.

If it does, you should get a full explanation of how to send the character definitions to the printer.

It will be very similar to the way in which you create UDGS on the computer, using a series of data statements to define the on and off bits of the character.

Once the graphics have been sent to the printer, you can then print them in the same way as the normal character set.



Printers - understanding basic characters

TIP

Ribbon revival

I find that I use up printer ribbons fairly quickly but have found a method which doubles the life of a ribbon.

The solution is to take the ribbon off the printer and spray it with WD40, which releases the unused ink in the ribbon which has dried up. Make sure that you allow the ribbon to dry before putting it back onto the printer.

This method will also work with colour printer ribbons and does not cause the ink to run together - my son has the LC10 colour printer and tried this method with excellent results.

Ian Forster, Carlisle

HELP!

Memory shortage

I have a Commodore 64 with 1541 disk drive and MPS801 printer, a set-up I find satisfactory for most tasks. Is it possible to buy an expansion board for the computer to increase its memory from 64K to 128K or 256K, and if so where can I buy one and what is the price?

I find that when using the EasyScript package, I sometimes run out of space before I run out of what I want to write.

Richard Moloney, Fingholt, Belfast

• Commodore produces a 256K RAM expansion pack called the 1541 which comes with its own power supply. However, it may not solve your problem with EasyScript.

The 1541 can only be used by software that knows it exists, and that obviously isn't true of EasyScript which is a very old program. However, it can be used as a large, very fast disk drive.

Your specific problem with EasyScript has two possible solutions. One is to break your work up into smaller sections and store them on disk as you work. The second is to buy another word processor which doesn't hog all of a document in memory but loads and saves text to disk as it is needed. This method means you have a document as large as the available disk space.

Either SuperScript or Mowdown are high-

ly recommended, and you should be able to get either from your local Commodore dealer. The same goes for the 1764 RAM pack, but if you have trouble you can order it mail order from F&L, 10 High Street, Pershore, Worce WR10 1BG, tel 0386 553153.

TIP

Big bang!

Regarding the ST crashing when switching off/on - the solution we're told is to do a memory, INCHRECT - I experienced this problem when I had an ST. After eight weeks it had the crackle, but turned on and off smoothly! It blew up! A massive spark came from the back.

I now own an Amiga 500, but I thought I'd warn any ST owners that the real solution is to get four deer choppers and rotate your ST up about 20cm. This prevents overheating with the pack, which provokes the problem. From then on until I sold the machine there was no problem.

A.J. Reader, Maidstone

HELP!

Excess access

I've just bought an Atari 520STFM which is working A-OK but a little problem with the disk drive. Most disks load and run fine, but certain commercial programs, while loading and running OK, will not switch off the drive busy light, which remains lit the entire time the game is being played. Even worse, some switch off the light but the drive keeps working.

What is wrong: the disk, the machine or both? I'm new to disks and very confused - please help.

Paul Godfrey, Newcastle upon Tyne
 • If your software is working correctly, there's absolutely nothing to worry about.

When you're loading a program, the busy light comes on to tell you that the read/write head is in action. Once a program has loaded, the light goes out.

However, when a program starts in reading or writing to the disk, the light will stay on until the file has been closed because even though the drive head may not be physically doing anything, the data is constantly open for changes. Some games open a file for graphics or other

information and only close the file at the end of a game session, so your busy light stays on throughout.

There are two possible explanations for the second circumstance, where the light stays off but the drive operates. First, disk drives are always 'on'. Even when the drive is idle, the motor is constantly spinning the disk, this is to make operations faster - the computer doesn't have to wait while the disk starts to spin and then comes up to speed.

Second, the busy light is based on the disk operating system as part of its normal duties. But some programmers, either for speed or because they think they can write better disk routines, bypass the operating system and access the disk directly. Usually they don't bother to turn the busy light on.

In any event, there's no cause for alarm. You'll soon come to know the other real sounds your disk makes when its working or idling, and you'll recognise anything that is a genuine cause for concern.

TIP

Whistling PCs

When your monitor is displaying the A+ prompt on the Amstrad 1512 PC you sometimes hear a hissing or whistling noise. To silence it, hit CTRL S twice.

Pat Lawlor, Sandycove, Co. Dublin

HELP!

Specsy specs

I have had this brainwave about how to improve the Spectrum's graphics and sound, and am wondering if my idea is at all possible.

If you remember the ZX Interface 2, you'll know that it allowed you to plug in games cartridges. In the same way, could the power of the Spectrum be increased by an interface that had a ROM with improved sound and graphics capabilities?

If this could be done, Amstrad (or anyone else) would make quite a killing from Spectrum owners looking for a decent upgrade but, like me, unwilling to part with their trusty Spectrum.

Is any of this possible?

Bryan Martin, Bangor, N. Ireland
 • Yes, it could be done. It's not even technically difficult, the just because something can be done doesn't mean it's worth doing.

The computer industry long ago decided that anything non-standard could safely be ignored. Suppose someone did produce an interface like you describe, perhaps, as you claim, a lot of Spectrum owners would buy it. But not all of them would, and software houses would then have to produce two versions of all their software - one for the standard Spectrum, and one for your improved machine. Or, they would think, well, just produce a standard version and that will run on every Spectrum.

So your improved capabilities would never get used. So fewer Spectrum owners would bother to upgrade. And so on.

You only have to look at the situation with Spectrum +3 disks to find evidence of this line of thought.

Technically, your idea is a brainwave. But commercially, I'm afraid, it's a bummer.

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And remember, there's no waiting around for monthly publication dates. The best tips, and solutions to your problems will be in print before you can say Alan Sugar.

So whether it's help offered or needed, write to: Tech Tips, How Computer Express, 4 Queen Street, Bath, Avon BA1 1JL.

TIP

Printer location

Many thanks to your magazine and to David Asford and Chris Bryant for the tip on rejuvenating the PCW print head. Every good tip deserves another, and the following may bring relief to some of your readers.

This may apply to other makes, but the PCW printer has only a short lead, and as with any printer takes up valuable space. There's no need for special leads, stands, shelves etc, though. Simply put a generous blob of Blu-tac under each of the front corners of the printer, and you will find that it will sit quite securely on top of the monitor, even though the rear three inches overhang.

John Brand, Binstead, Surrey

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State of the

The shock of the new: Andy Storer meets William Latham, the man behind the most stunning



These days, Picasso pretends in print. The Conquest of Form is the first major one-man exhibition of computer art in Britain by the only exponent in the field using programming languages as opposed to paint packages. William Latham's work has attracted wide critical acclaim for its distinctive marriage of Art and Science, leading some commentators to herald it as a new art form. Latham himself prefers to compare the impact of his work on traditional artforms with that made by Cubism.

Using IBM workframes running custom software more used to handling engineering component design, Latham has written a complementary complex model manipulation language - Form Synth - which effectively twists the emerging designs with the disciplines of modular sculpture. IBM's resources for approximating the work are obvious. Being able to choose infinitely textured, highly complex models has tremendous potential for developing marketable packages for architects and designers.

Dates and places

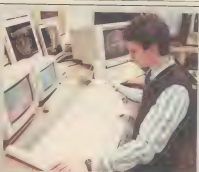
The Conquest of Form can be seen at Britain's Arndale Gallery until mid-January and features large format Cibachrome prints, computer animation, interactive displays and stereoscopic images. The exhibition then moves on to Colchester, Milton Keynes, Hull, Barnsley, Newcastle, Edinburgh and Fakenham.

Models are originated in low-resolution 64 x 64 pixel form as wire-frames before being rendered. At this stage, the artist is merely setting the parameters of the design to be generated - deciding which perfect forms to synthesise and which array of colours to employ. The language



art

computer graphics yet



• William Latham consults his blueprint for the next transformation



• A close-up of his 'evolutionary tree II' form

Portrait of the artist

After graduating in Fine Art from Oxford University and moving to the Royal College of Art to study sculpture and print-making, 27 year old William Latham's first introduction to computers was with a humble BBC where he began to program 3D object manipulation routines in Basic. Believing computers were a largely unexplored avenue for the artist, and after seizing opportunities to lecture part-time in computer graphics using Macintoshes and PCs, he began to develop a 30th by 4th drawing - 'an extraordinary tree of forms' - in April this year. It formed part of a PhD thesis entitled 'An interactive computer graphics system for designing complex forms' and acted as a blueprint to show how 'perfect forms' - cones, spheres, cubes etc - could be progressively transformed into complex organic shapes.

IBM was sufficiently impressed with his efforts to offer him a post as Visiting Fellow at its Scientific Centre in Winchester. He is now based there full time and has dispensed with traditional artforms completely, preferring to sculpt directly on the computer screen.



used is sufficiently flexible to be able to describe quite sketchy combinations of colour - for instance Gold would be described as light, pale yellow, iridescent.

The 3D vector graphics can be rotated and oriented as required and are then gradually textured, lit and blended so they are given progressively higher resolution. By the time the image is ready for ray-tracing - imbued with an aesthetic appearance derived from lightsource positioning - the model will have a resolution of at least 2048 x 2048 pixels. Texture is generated in 3D using fractal techniques incorporating randomisers such that the object acquires the appearance of polished metal or glossy plastic. The hardware used is sufficiently powerful to allow a fully textured model to be produced in around six minutes. As such, the process of origination is perhaps the most pliable in all art production; there being no real notion of finality. The image is generated, rendered and scanned to slide output. Or it's erased. ●

A grand idea

At present IBM has no plans for commercial release of the software employed but has given Latham the opportunity to tell his work to the public. If you want a piece of the future it'll cost you between £500 and £1,000.

Hard copies

These photographs are screens dumped to slides. Latham is currently developing other means of output using holograms and full colour stereoscopic monitor images. Another possible avenue for output is provided by the US firm 3D Systems that has produced a machine which builds up layers of ultraviolet curable polymer to form solid stand-alone 3D models.

Latham's also produced a six minute animated film of a variety of these objects in motion, which features one incredible sequence where years passing through time appears. As you might have guessed by now, he's a soft fan item on film and would love to provide motion picture special effects.



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* Amiga 1000 - how it had its chips?

ents can be designed. The package can be used for a whole number of applications such as adding life-like intelligence to characters and even games.





Tone deaf

Everybody has got a phobia, and I am prepared to admit, in public the mine is computer music. Now I'm not saying that you can't make decent music using a computer system. Just that I don't like most of the stuff produced, it is all sounds like old Atlantic League records to me without the singing.

Now I am not that much of a snob, but let me ask you a question - how do you think all this dreadful music is the choice of professional disk artists? Kyle Blagrove is MP.

However, I wouldn't deep up any one's phobias - and so I'll move into a quick look at the MEGS 5405 Junior from Hybrid Technologies.

This is a cut drop version of the 5400 series without the AMPUS language, but including a superb display of a moving disk and keyboard. From here, you can do your own editing and playing of sounds.

Perhaps of pre-recorded music is possible and you can even create your own compositions.

The system is fully reconfigurable and is

convenient. Just please, please don't release any records with a cassette!

Press pun-ishment

Now for my bit of the week: to those of me is writing a press release from Level 9 Computing, concerning their new game, *Ignite! Fire!* However, I am only going to say that the game is available now, it is three-part structure, needs adequate RAM, and will cost £14.95. The week is that the release contains every juvenile pun on games imaginable, and it is that a good example of the very silly sort of

Submission tips

I recently had a letter from a reader complaining about the treatment of a submission of his by a well known software house.

Now I am not going to comment on this case, but as someone who has sent a lot of submissions I have sympathy with both sides. So here are some tips on how to become a software millionaire.

First of all, do some basic market research, i.e. find out who wants or needs software, and in what form. For example, a magazine will want a covering article, whereas a software house will want technical details.

Second, pack it up properly with lots of tefloning. Third, include full documentation on disk, and paper. Fourth, include a covering letter. Fifth, include return P&P, and sixth be patient.

press release

The other, more concrete version is the potentially positive. You know the sort of thing. This product is widely accepted by industry analysts as being capable of all sorts of wonders, and so on. As a journalist, I use hundreds of press releases, and the sort of thing is just plain irritating - so



Mentis tips

Kevin McGeehan from Northern Ireland sent in a really good games player, because he has sent me loads of prizes and tips for MEGS games.

These are too many to print in one issue of *Express* so this week I will just stick to the tips for *Ad Widenheimer's Moby*.

Before loading the game, type in key 1, 'MENTIS', and press RETURN. When the game has loaded, pick up the gun in Gibraltar for unobtainability to everything but the main character.

Christmas bonanza

I don't think I've ever so many new pieces of games software released at one time as the MSX last year has the quantity of software increased, the quality has likewise improved.

This next month should see the release of games such as *Afterburner*, *Out Run*, *Galactic Commander*, *The Monitors*, *Panicum*, *Trantor*, and many more.

Also, with companies like Taito, Bannister and Type Soft now releasing titles with increasing regularity in the UK, the MSX format has never been better supported.

The MSX is still strong in certain parts of Europe, the Middle East, South America and - of course - Japan, and at most of the larger software houses produce games for export, it's worthwhile these com-

panies to take an interest in.

The Spanish market goes to Juventus, 1000 the Chateau where to Dortmund, the Dutch team to Czechoslovakia, the winning wheel to Monaco, the odds at the boy in Amsterdam, the stage to Julian in Paris and give the Moss Line to the Mable house.

Thanks for the tips, Kevin.

Pioneer value

I found a marvellous reading last November's letter on issue 2 regarding the Pioneer PS/2 computers.

These machines are amazing when it comes to a video card, and really can't be beaten at the price. You can even buy software designed specifically for video taking using these machines. The software is produced by Argonaut and is available in tape or disk for £19.00.

One problem you might encounter if you purchase the PS/2 and wish to play games on it as well, or put it to support business use, is its lack of memory. The PS/2 has only 32K of RAM, and most MSX software is designed to run on the MSX machines.

A way round this problem is to purchase the New 32M48 RAM expansion pack. This will cost you a further £49.00.

The video software and the RAM pack can be purchased from D. Chittenden Ltd., The Broadway, Chesham, Bucks (Tel: 0494 766411).

Put on the back

Thanks to all those who wrote in to *Express* offering the magazine for supporting the MEGS. Let me know

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PSsst!

A last look at the computer scene by cynical old hack, Private I

Hack to the future

The world really is rising against the future hackers. They've been elevated into the Demons Of Our Time, responsible for the ills of modern life and with which no decent folk will have anything to do. On that basis, they're doubtless linked with acid parties, the Sunday Sport and the imminent outbreak of World War Three.

At least that's the impression you get from the national press. Give them a clearly identified miscreant and the tabloids will bash these wretched hippies/hippies/miscreants/hackers until they squeal.

So it was no surprise to hear that Tony backbencher Emma Nicholson wants hacking to be made illegal. The only oddity is that she didn't require them to pay off the national debt or be flogged daily at noon - whichever is the more satisfying. The Daily Mail's wholly characteristic "Why Computer Hackers Make Lousy Lovers" was in the same vein.

Never mind that most hacking is simply the unobscured in pursuit of the snubable. The hacker bashing season has been opened with a vengeance because National Security is at stake.

So, for once, thanks for a piece of American sanity. Reader Ian Gray has helpfully provided a cutting containing the thoughts of Robert Morris, the father of the hacker who caused the biggest computer glitch on record. Morris says: "The notion that we are raising a generation of children so technically sophisticated that they can outwit the best efforts of the security specialists of America's largest corporations and of the military is nonsense. I wish it were true. That would be well for the technological future of the country."

Over here, meantime, paranoia rules.

Don't let the fax get in the way of a good story

Cut fanlaries - Britain's first Hold the front page! An amazing, devastatingly innovative, mega, new fax service has been launched by Database - or Microlink, as the cheer chips call themselves in this context. Not content with delivering said announcement by Telecom Gold fax they! The medium is the message, the wacky fanlaries have deliberately shown how not to communicate by being incomprehensible.

Try this. "Microlink have come up with an instant answer for their ad. For their ad! Crazy people!

Then there's "...whether messages queued for transmission have be". To be or not to be, eh Microlink?

The true fun of it all is that the release banded on about how the service was too difficult in the past and how it had been improved. Gosh or what? Answers on a postcard sent not by fax...]

Ploys will be ploys

It's good to see that the old ploy of "As seen on TV" is being wheeled out by US Gold on the packaging of Thunder Blade. It might just make the difference between it and Afterburner in the oh-so-vital race for the Christmas Number One.

Of course, the ploy is not wholly without substance either. Not that US Gold has actually advertised on television, as you might think. Conversely, quite recently, it has chosen to blow £1.5 grand putting a visual product on radio. But let that pass. Yet Thunder Blade has indeed been on the box - appearing on the Sega ad for about a quarter of a nanosecond.

On that basis, were pondering showing "As seen on TV" on the front of Express. Whoddy mean, you haven't seen it? Express was there in considerable glory on the shelf in the newsagents in EastEnders. Well it will be. Eventually. Honest.

Maintaining standards

Computer folk are in danger of growing up. For a start, the Advertising Standards Authority's monthly tome of offenders was riddled with computer firms promising the earth but only delivering a cut. Back in February 1987, the industry was branded as the worst of all for complaints. These days, they're all so damn smug in their operations that problems are as rare as a Mercedes owner with a sense of the ridiculous.

Then, with 23 days of 1988 left, it is with some certainty that PSsst can present its award for the most outrageous advertising claim of the year. The winner? Display Electronics of south London don't say "wot".

According to the latest ASA report, the merry fellows claimed to have "20,000 feet of electronic and computer goodies". Over-egging the matter just slightly, it drolly added that it was "England's largest surplus store - seeing is believing".

Well, up to a point. Notwithstanding the fact that Display sold the desecrated obscure Commodore PS500 for £49. ("With no software at all", detailed investigation discovered that this shop consisted of a single room, measuring 15 by 30 feet.

PC SORROW

A couple of easy production errors crop up into last week's PC buyer's guide.

The price quoted for Value's Advent PCKT20 Studio in fact includes an £88 colour monitor - so the machine is even better value than we stated.

The Storage ratings were in fact out of 25, not 20 and opening of Storage, two of the items listed on page 19 appeared in the wrong bar - the Advent PC in fact has a 30MB hard disk and a 5.25" floppy, while the Amstrad PC2286 has two 3.5" floppy drives giving a total of 2.88MB of storage.

Sorry for any confusion, folks.

Man's best friend is his SuperCalc



Be they ever so interfering, the trouble with computers is that they're usually very dull dogs. It has to be said, are exactly the opposite. So the manager of the canine and the silicon has a verse logic to it. That's exactly the sort of thing to appeal to About Computer Products in its dogged quest to offload a vast quantity of Amstrad software as cheaply and as quickly as possible.

The only surprise is that About hasn't drawn all the hours to come up with some sleazy dog pun to justify the whole ruse.

And that's where you come in. Just answer the following questions correctly and supply a witty speech bubble, slogan, and you'll win a copy of

WordStar 512 or SuperCalc 3.1.

1. How many dogs are there in this pic? (Those having any reference to the quality of Amstrad software will be disqualified on the grounds of coziness).

2. Exactly why is the -er, bigger dog sitting in a chair lobscromies - dits above?

3. What is the connection between SuperCalc and the Labrador?

4. Name any computer product of any sort that has any connection - however tenuous - with dogs.

Send your answers and tediously witty captions/bubbles in Last Story, c/o PSsst, c/o Fine Computer Express, 4 Queen Street, Bath, BA1 1BU.

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